

EXHIBITION

MOTES OF THE STREET, WATTONS.

LONDON: EXH. 1851

BAR-B-F 980 99

### EXHIBITORS.

JIE .107

### MACHINERY.

Crass VI.

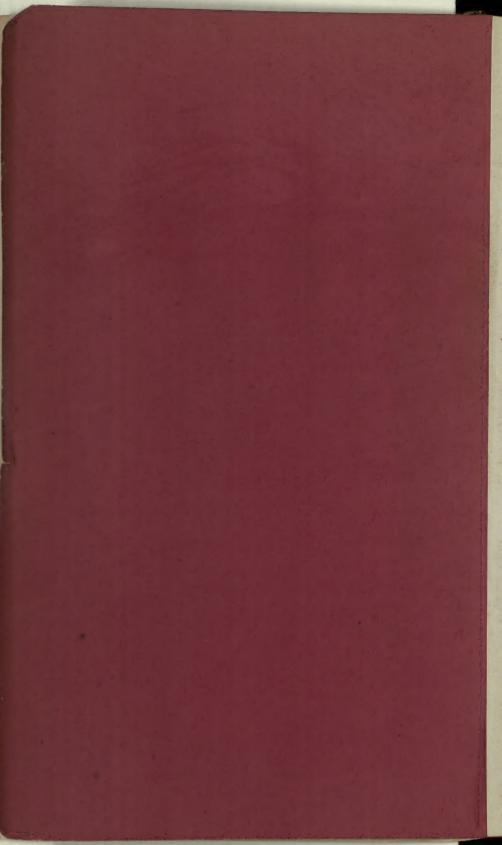
MANUFACTURING MACHINES AND TOOLS.

22715

### MACHINERY.

CLASS VI.

MANUFACTURING MACHINES AND TOOLS.



### EXHIBITION OF 1851.

### ALPHABETICAL LIST

OF

### EXHIBITORS' PROSPECTUSES.

### VOLUME III.

CLASS 6.

Baume, C. de la Berthelot, N. Black. Boucher, E. and Cie. Claussen, Chevalier Chrichton Desplanqués, Jeune Enfer, E. Furness, William Gaimes and Co. Gatti and Bolla Harrison, J. and W. Hermann, G. Holtzapfell and Co. Jarrett, Griffith Lanenville, V. Lawrence, J. Lawson, S., and Sons

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The names marked thus \* have not furnished a sufficient number of Prospectuses to render the series complete.

John Son bridgings

ALE THEFT LIST ALS

THE REPORT PROSPECTOR

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\* with business or washing

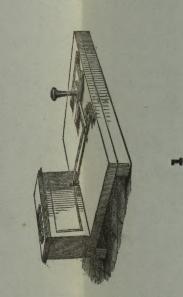
# APPARATUS

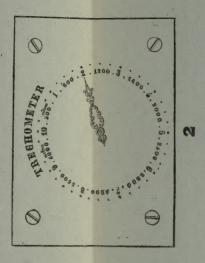
FOR

# STAMPING, COUNTING, AND REGISTERING.

PROVISIONALLY REGISTERED.

PATENTED IN FRANCE AND BELGIUM, &c. &c.



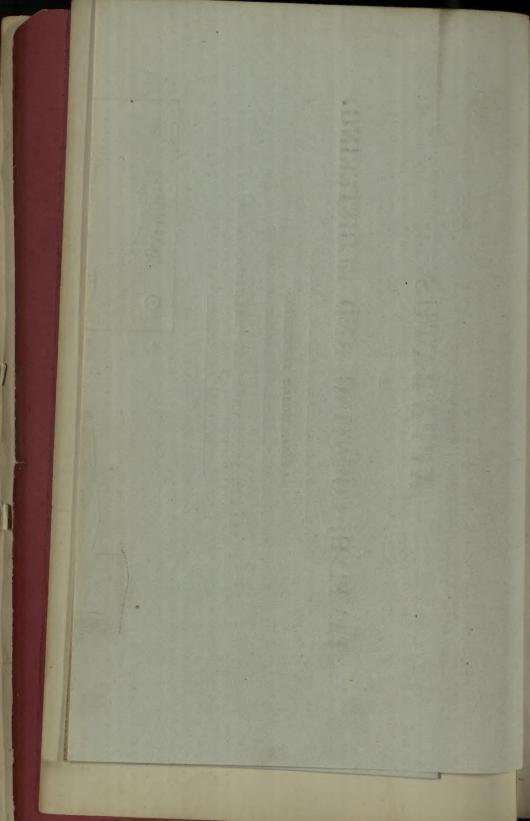


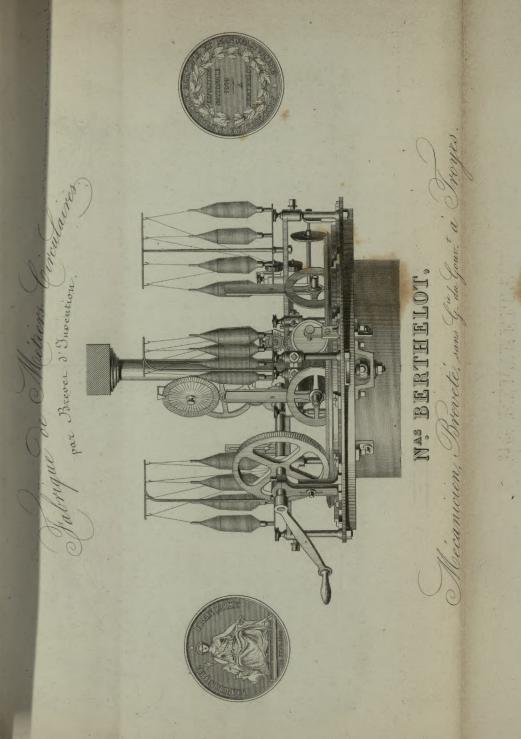
The simplicity and cheapness of its mechanism, renders it of great service in all public and private offices where This new Apparatus, called a "Counting Stamp," fig. 1 is the first of the kind which unites all the conditions necessary for ensuring solidity, precision, and cheapness, and at the same time obtaining an exact The same Apparatus can serve for every kind of stamp, one being replaced by another, or even many stamps may be adapted to the same Apparatus with the greatest facility. it is necessary to count and have a check upon bills, letters, newspapers, shares, invoices, &c. The authorities of the post-office, bankers, and public companies, will find it of the utmost utility. register of the number of articles stamped.

The Apparatus will cost about £2 for the mechanism, the cost of the stamp or die, is, of course, quite When the stamp or die is omitted from the Apparatus above mentioned, it becomes a registering and counting machine of the utmost simplicity, and can be applied to many purposes to which the ordinary counting machine, owing to its high price, is inapplicable.

It can be applied to reckon the number of passengers on bridges and roads, and at the entrance to public places; also to the wheels of carriages and locomotives, and especially to cabs, to measure the distance travelled (see the above fig. 2 representing the Trechometer or counter of distance); to the fly wheels of steam engines, to printing presses, and water wheels.

Apply to Mr. Terry, No. 20, Rue de Courcelles, Paris; and to Mr. De Fontaine Moreau, Patent Office for Inventions, 4, South Street, Finsbury; and 24, Boulevard Poissonnière, Paris.





Le système breveté en faveur de M. Berthelor présente l'avantage de supprimer à peu près toutes les difficultés que l'on rencontrait sur les métiers circulaires et rectilignes ordinaires pour obtenir la fabrication des matières dures ou peu slexibles. On peut y fabriquer le coton, le coton retors, le fil de lin et de chanvre, la laine peignée, la soie et généralement tout ce qui peut être filé, même le fil de fer, et cela avec autant de facilité que le coton. On obtient surtout pour les matières fines un tissu bien supérieur en qualité et en beauté à tous les tissus fabriqués par les moyens ordinaires. Dans ce métier, la mailleuse est supprimée et remplacée par un cercle ou couronne qui entoure entièrement l'apaiguilles jusqu'après le passage de la roue de presse, et ne le lâchent qu'au moment où la maille poussée par l'abattage vient tomber sur la maille inférieure. C'est ainsi que l'on obtient un formage régulier. Chaque maille étant pareil et qui détermine le jeu des platines. Aussitôt que le fil est distribué, les platines le retiennent dans le bec des prise, maintenue et lâchée successivement, les matières les plus dures et celles très-peu flexibles ne peuvent sortir du bec de l'aiguille avant que la maille soit formée. Ce système permet aussi de serrer les aiguilles autant qu'on le veut, et par conséquent de construire les métien d'une jauge très-fine, ce qu'il est difficile de faire avec les systèmes unciens.

Chaque métier est muni d'un compteur qui indique la fin des opérations et le nombre de tours.

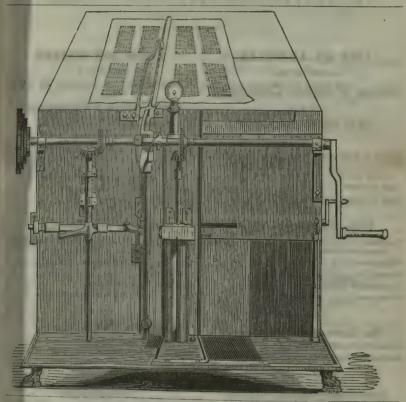
On peut placer sur le contour 4, 2, 8 ou 4 systèmes d'organes travailleurs, et faire par suite 4, 2, 3 ou 4 mailles par tour du métier. Un tour s'effectue en une seconde.



### FOLDED IN THE Great Exhibition of all Pations,

### BLACK'S PATEN FOLDING WACHINE

SECTION II .- CLASS VI .- No. 138.



### BLACK'S PATENT FOLDING MACHINE

Is capable of folding any number of sheets, of any size, whether 8vo, 12mo, or 24mo (which can be laid on by one or two boys), with the most perfect accuracy. Its advantages consist not only in economising the expense of labour, but also in space, the Machine taking up no more room than would be occupied by two individuals folding by the old method. The Machine can be worked by steam power; or one man at the wheel could propel six machines. It can also be applied to the property of the pro folding Note and other Paper at the mill, at the rate of 2000 quires per hour, or more; and is likewise applicable to the folding Newspapers as they come from the Machine.

This is the only Machine ever invented by which perfect register can be obtained, the principle being secured by Letters Patent granted for the United Kingdom and the Colonies, France, Belgium, the United States, and the whole European Continent.

Terms, &c., may be obtained by application to the London Agent, Mr. M. T. RAYMOND, 8, Exeter Change, Catherine-street, London.

\*, \* Parties treated with for the manufacture of this Machine, either for the United Kingdom or Foreign Countries.

### Classes 26 and 28, at the Great Exhibition.

### GUTTA PERCHA COMPANY, PATENTEES,

18, WHARF ROAD, CITY ROAD, LONDON.

### LIST OF ARTICLES

SHOWN BY THE

### Gutta Percha Company

AT THE

GREAT EXHIBITION OF 1851.

Blocks of Raw Gutta Percha; one showing the deception practised by the Malays, in putting stones, &c., into the blocks.

Tray of Sliced Gutta Percha Tray of Cleansed Gutta Percha

### Waterproof Applications.

Specimens of Covered Canyas, and Patent Waterproof Gutta Percha Cloth Waterproof Soles for Boots and Shoes Piece of Solutioned Jean for Insoles Hydropathic Bandages Waterproof Heels with Metal Tips

### For Agricultural Purposes.

Pumps for Liquid Manure Stable Bucket—Traces—Horse Shoe Pad

### For Manufacturing Purposes.

Flat and Round Bands for Machinery Bucket—Pump Bucket—Valves Cutting Board for Glove Makers Piece of Felt Edging for Paper Makers Flax Holders (Plummer's Patent) Specimens of Packing for Steam-Engines Washers for Cold Water Pipes Bosses for Flax Manufacturers

Woven Driving Band, saturated with Gutta Percha

Specimens of Gutta Percha Card Cloth, of three and four plies; a substitute for leather for the backs of Cards used in Carding Wool, Cotton, and other fibrous substances

### LISTE DES OBJETS

ENVOYES A

L'Exposition de Londres de 1851

### COMPAGNIE FABRIQUANT DU GUTTA PERCHA.

Morceaux de Gutta Percha, non-préparés; dont l'un donne l'exemple de la manière employée par les Malays de détériorer la valeur du materiel, en y mélant des pierres, etc.

Plateau de Gutta Percha laminé Plateau de Gutta Percha purifié

### Articles Impermeables.

Echantillons de Tissus brévetés imperméables Semelles de Souliers et de Bottes, imperméables Tissu preparé imperméable pour les Semelles Intérieures

Bandages Hydropathiques Talons montés sur metal, imperméables

### Articles d'usage Agricole.

Pompes pour Engrais liquide Seau d'écurie—Bourrelet de fer-à-cheval.

### Articles employes dans les Manufactures.

Bandes plattes et circulaires pour les Machines Seau-Seau-de-pompe—Souspapes Planchette pour la Coupe des Gants Bordure à l'usage des Fabriquants des Papiers Poignée Brevetée par Plummer, pour le Lin Renfourage des Pistons des Machines-à-Vapeur Disques de Tuyaux à Eau Froide Bossettes employées dans les Manufactures de

Bande Tressée Mécanique préparée avec Solution de Gutta Percha

Morceaux de Toile Cardée, en Gutta Percha, à trois et à quatre plis, employés au lien de cuir pour la Cardée des Coton-laines, et autres tissus

### GUTTA PERCHA COMPANY (continued).

### For Maritime Purposes.

Anchor Floats-Buoys

Fishing Net Floats

Life Buoys, and Air-tight Life Boat Cells

Pilot's Hat

Sou-Wester Hat.

Coils of Round Band for Signal Halliards

Speaking Trumpets

### Decorative Applications.

Brackets—Console Tables—Cornices

Ceiling Centres-Mirror and other Frames

Picture Frames-Friezes-Girandoles

An prnamental Side-Table, in panels, representing the Four Seasons, with glass frame, in three compartments. In the style of Glibbons

Chessmen and Stand

Frame for Print of the "Anti-Corn-Law League"

Daguerreotype Frames

Panels

Mouldings in imitation of Carved Oak, Rosewood, &c., &c., for the decoration of Rooms, Ship's Saloons, Cabinet Work, &c.

Pattern Book of ditto

Specimens of Gilded Gutta Percha

### Surgical and other Applications.

Bed Straps

Ear Cornets

Ear Trumpets

Hearing Apparatus for the Deaf in Churches, &c.—Pessaries

Pieces of Sheeting for Splints

Pieces of thin Sheeting for Bandages, &c.

Stethoscope

Dr. Foucart's Clavicular Splint

Set of Teeth in Gutta Percha Base or Bed

### Chemical and Electrical Applications.

Acid Scoop

Vessels for Acids

Carboys

Chemical Bottles—Chemical Flasks

Various Specimens of Submarine and other Ricctric Telegraph Wire

Funnels-Insulating Stool

Galvanic Battery Troughs, with 12 or 24

Galvanic Battery Cell

Specimen of Lining for Acid Tanks

Syphons

### Articles employes dans la Mairne

Flotteurs d'Ancres-Bouées

Flotteurs de Filets

Bouées de Sauvetage, et Cellulles imperméables

pour Bateaux de Sauvetage

Chapeau de Pilote

Chapeau "Sud Wester" (de Marin)

Bandes Circulaires pour signaliser

Porte-voix

### Objets de Luxe et de Decoration.

Tasseaux-Tables-consoles-Corniches

Centres de Plafonds-Cadres divers

Cadres de Tableaux-Frises-Girandoles

Une petite Table élégante avec des panneaux ornés représentant les quatre saisons avec un chassis de glaces en trois compartiments.

Echiquier et Echecs

Cadre pour la Gravure de l' " Anti-Corn-Law-League"

Cadre pour Daguerrotype

Panneaux

Moulares, imitations de Chêne ciselé, de bois de Rose, etc., etc., pour décorer les Salons, l'intérieur des Bâtiments, etc., etc.

Livre d'Echantillons de ces Articles

Ornemens dorés en Gutta Percha

### Applications Chirurgiques.

Sangles de Lits

Trompette-à-Cornet pour les Sourds

Trompette à l'usage des Sourds

Appareil à l'usages des Sourds pour les églises— Pessaires

Morceaux de Toile pour éclipes

Morceaux de Toile mince pour Bandages, etc.

Stéthoscope

Eclipe Claviculaire, du Dr. Foucart

Râtelier complet monté sur Gutta Percha

### Applications Chimiques et Electriques.

Ecope pour les Acides

Vases pour les Acides

Carboys (Cruches pour préserver les Acides)

Bouteilles Chimiques—Flasques Chimiques

Plusieurs espèces de Fil-télégraphique Electrique-sous-marin et autres

Entonnoirs-Tabouret-électrique

Auges de Machines Galvaniques, l'une à 12 et l'autre à 24 divisions

Cercle Galvanique Simple

Manière de doubler les Reservoirs à Acides

Siphons

### Domestic Purposes.

Basins—Bowls—Baskets
Bread Platter—Bouquet Holder
Bottles
Bottling Boot
Specimens of Clothes Line
Curtain Rings
Decanter Stands—Drinking Cups
Finger Cups—Ink Stands—Ink Cups
Lighter Stands—Paper Weight
Plates
Trays, Ornamental, various patterns
Vases—Wafer Holders
Watch Stands
Specimens of Lining for Water Tanks, &c.
Specimens of Window Blind Cord

### Miscellaneous Applications.

Architects' Plan Cases Bouncing Balls - Golf Ball -- Cricket Balls Communion Plate Carriage Tubes Specimens of Corrugated Sheet for Wine Packing Dolls-Fire Bucket Piece of Fringe for Mourning Coaches Fencing Stick Guard Cornish Miner's Hat Northumberland Miner's Hat Life Preservers-Medallions-Music Case Discs for Official Seals Specimen of Paper for Damp Walls Police Staff-Powder Flasks Railway Conversational Tubes Coil of Sash Line Stop Cocks-Pairs of Skates Samples of Thread Tap Ferrules-Whips Specimens of Welting Cord for Female Dresses. Specimens of Tubing of various sizes Speaking Tube Union Joints for Gutta Percha Tubing

### Articles Usuels

Bassins—Gamelles—Paniers
Plateau pour le Pain—Porte-Bouquet
Bouteilles
Bottes de remplissure de Bouteilles
Cordes de Blanchissage
Anneaux de Rideaux
Portes-Bouteilles—Gobelets
Doigtiers—Ecritoires—Enoriers
Portes-Lumières—Presses Papiers
Assiettes
Plateaux divers et de luxe

Vases—Portes-Pains à Cacheter Portes Montres Echantillons de doublures pour les Reservoirs d'Eau, etc.

Echantillons de Cordes de Jalousies

### Applications Diverses.

Boête à dessins d'Architecture Balles Elastiques-Balle-Eteufs Assiette pour Aumônes dans les Eglises Tuyaux de Voitures Echantillons de draps ridés d'Emballage, pour les Vins Poupées-Seau d'incendies Morceau de Frange pour Voitures de deuil Garge Porte-Coup d'Escrime Chapeau de Mineur, Cornouaillien Chapeau de Mineur du Northumberland Conserves-Médallions-Etuis de Musique Disques de Cachets Officiels Echantillons de Papiers pour les murs humides Bâtons de Sergeants de Police-Pulverins Tubes de Conversation de Chemin-de-fer Rouleau de Corde de Jalousies Robinets-d'arrêts-Patines Echantillons de Fil Viroles de Robinets-Fouets Echantillons de Corde-à-border pour Robes de Dames Echantillons de Tuyaux de dimensions diverses

### CUTTA PERCHA COMPANY, PATENTEES,

Tuyau Porte-Voix

Jointures de Tubes en Gutta Percha

18, WHARF ROAD, CITY ROAD, LONDON.



HARRIET GIVING UP THE PRETTY PONY HER GRANDFATHER HAD BOUGHT FOR HER, THAT SHE MIGHT GIVE THE MONEY TO HER POOR BLIND FRIEND ALICE.

The above Engraving is from one of the Volumes of

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This may be regarded as one of the most remarkable and glorious Literary achievements of mo lern times; it is at once a unique and striking demonstration of the intellectual and moral capabilities of the Working Classes. The subjects are various, and the mode in which they are treated has called forth the admiration of several distinguished Members of the British Senate, and the warm eulogies of a large portion of the Public Press.

The following Letter, in reference to this extraordinary Volume, has been received by Lord Du lley Coutts Stuart, who transmitted a copy of the work, by the hands of Colonel Phipps, to His Royal Highness PRINCE ALBERT :-

"My Dear Lord Dudley- To the state of the Company o

"The Prince desires me to acknowledge the receipt of the volume of 'The Literature of Working Men 'which you have been good enough to send him through Colonel Phipps. His Royal Highness has much pleasure in accepting it, and begs you will have the goodness to convey to Mr. Cassell the expression of his best thanks.—I remain, yours, very truly,

The Lord Dudley Stuart."

"This is a wonderful volume, containing a rgeat variety of talented and well-written matter, which has come from workmen of almost every craft and labour. We have read a number of the articles, and have to confess that while perusing them, a feeling of pride arose in our bosom as we paused and contemplated our workshops, containing, as they do, so many expanded, robust, and polished minds. It would be well, said we, for our country, and well for the world, were all our artisans and labourers to become imitators of those who have set before them so noble an example especially were all subject to the sceptre of the Reigning Judge. The country owes a large tribute of gratitude to Mr. Cassell, for bringing so many fair gems out of the workshop. We meend the volume to our readers."—Glasgow Christian News.

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### TO HEADS OF FAMILIES.



VERY few families can be found in this country altogether free from the visitation of sickness and disease. It is true that the human system has been so constructed by a wise and gracious Providence, that all its operations may contribute to produce and maintain that state denominated Health; but it is also true, that the enjoyment of this blessing depends upon the observance of certain plain and unalterable laws, and that if those laws be infringed, whether from ignorance, or with the vain idea of improving the constitution,

disease and pain will be the sure result. That these laws are continually infringed we have painful proof, and the important question immediately arises, how are these evils to be remedied? It is not necessary to enumerate the diseases incident to the human frame. They all proceed from a corrupt state of the blood-from the accumulation of vitiated humours, which obstruct the due operation of the physical functions. Hence it is obvious that no medicine, however expensive, or however frequently used, can render effectual aid, unless it removes these obstructions and purifies the blood. This is precisely the office of the medicine prepared by John Kaye, Esq., of Dalton Hall, near Huddersfield, and St. John's Wood Park, London. This medicine has long been known as Kaye's Worsdell's Pills, and is now celebrated in every part of the United Kingdom as the best Family and General Medicine extant. It is no mean praise to say of these pills, that there is no form in which disease can assail the human constitution which has not been successfully met by them. Thousands who had suffered long and acutely, many of whom had sought medical aid in vain, and were declared incurable, have by the use of these Vegetable Restorative Pills been restored to the enjoyment of that greatest of all temporal blessings, sound health. Their testimonies would fill a large volume: a few are subjoined for the purpose of assuring the afflicted that they may confidently indulge the hope of obtaining a speedy cure, whatever be the nature or virulence of their malady. No sooner are they introduced into the system than they cleanse the stomach and bowels of all impurities, open the pores of the skin and the natural drains of the body, induce proper discharges, and, in a word, theroughly purify that vital principle, THE BLOOD. By thus going to the very root of disease, they emancipate the various organs oppressed by vitiated humours, bring them into free operation, and enable them to perform their functions in a healthy and vigorous manner.

FACTS have abundantly demonstrated that the Vegetable Restorative Pills are capable of rooting out and overcoming any curable disease. Stomach complaints, indigestion, flatulency, heatburn, nausea, want of appetite and rejection of wholesome food, headache and dizziness of the brain, are speedily removed by the use of these pills. Diseases of the liver, bilious affections, jaundice, dropsy, and worms, have been cured in innumerable instances. Affections of the chest, asthma, incipient consumption, inflammatory disorders, and fevers, are immediately mitigated, and ultimately cured, by these invaluable pills Cutaneous disorders, also scurvy, scrofula, and eruptions of every kind, are very soon purged from the system. Boils, sores, ulcers, abscesses, and other disorders proceeding from burning and acrimonious humours, readily yield to the influence of these pills: the inflammation is allayed, and perseverance in the use of them will root out the disease and

heal the wounds. Other diseases are speedily exterminated from the system.

The Proprietor wishes it to be distinctly noted, that while the Vegetable Restorative Pills are thus powerful to remove all unhealthy obstructions, and completely to purify the blood, they are purely vegetable, and free from all that can possibly injure. The infant, the mature, the aged, and even the most delicate female, may take them with perfect safety. And it should be borne in mind, further, that while these pills are valuable as aperients, they also prove valuable tonics. So far from weakening by their operation—as is common with ordinary active medicines—they materially strengthen the whole system.

In conclusion, let Kaye's Vegetable Restorative Pills but have a fair trial—only let their use be persevered in, according to the printed directions—and a large portion of health strength, serenity, and vigour, will be the sure result.

### TESTIMONIALS

IN FAVOUR OF

### Worsdell's Vegetable Restorative Pills,

PREPARED BY

JOHN KAYE, Esq., of Dalton Hall, near Huddersfield, and St. John's Wood Park, London.

### INDIGESTION. AND OTHER STOMACH COMPLAINTS.

Thousands are afflicted with indigestion, together with its usual accompaniments, flatulency, cortiveness, heartburn, nausea, and other painful and unpleasant feelings. But the question so often asked, "Is indigestion curable?" may now be satisfactorily answered. Kaye's Worsdell's Fills will, in a very short space of time, free the stomach from all crudities and vitiated secretions, and consequently aid digestion, and free the head from oppressiveness and pain.

JONATHAN GOOD, tailor, residing at Winchester, suffered for years from indigestion. Kaye's Worsdell's Pills were recommended to him, and he is thankful that ever he used them, as he has been better in health since than he had been for years previously. He strongly recommends the Pills to all who are similarly afflicted.

ISAAC BAILEY, 26, Regent-street, Oldfield-road, Salford, suffered severely from indigestion for twelve months; and though under treatment by two medical men, he received no benefit. He procured one box of Kaye's Worsdell's Pills, by taking which a complete cure was effected.

Joseph Juggins, of Market-street, Beds, had been labouring for thirty years under a complaint in the stomach, which he attributed to lying on the damp ground whilst serving in the army under the Duke of Wellington at the Battle of Waterloo. He had taken medicines in abundance, and incurred great expense in hope of relief; but the pain and sickness gradually increased, and he had given up all hope of a cure, expecting his disease would carry him to the grave. A short time ago he was recommended to try Kaye's Worsdell's Pills. After taking two boxes, to his astonishment and gratification, the pain, which had been his constant companion for so long a period, was so greatly alleviated that, buoyed up by hope, he persevered until he had taken six boxes, which effected a complete cure; and, although now far advanced in life, he enjoys a state of health to which he has been a stranger for the last thirty years.

Mr. Joseph Harbour, Chard, whose complaint was indigestion and pain in the stomach, has derived great benefit from Kaye's Worsdell's Pills. He had before expended much on medical advice and medicine, without receiving any benefit.

ELIZABETH CALLER, of Over Stratton, South Petherton, was for many years afflicted with violent spasms in her stomach, in consequence of which she was frequently confined to her bed. After for the benefit of others.

Mr. Thomas Sharpe, of Barrowby, near Grantham, had suffered for twenty-two years from indigestion, accompanied by constant sickness and vomiting. Many physicians had been applied to good state of health.

Mrs. Lane, of Bitton-street, Teignmouth, states that her daughter was severely afflicted with indigestion, palpitation of the heart, and an overflow of blood to the head, occasioning dizziness and particular current by the use of Kaye's Worsdell's Pills. In a very short space of time she was

Mr. G. Hatch, Ugborough, near Totness, was troubled for nearly eighteen years with extreme pains in the stomach and giddiness in the head; for upwards of four years he was unable to attend to business The use of Kaye's Worsdell's Pills has restored him to perfect health.

### BILIOUS AFFECTIONS—BOWEL DISORDERS.

Disorders of this class require immediate attention. Unless the alimentary canals be thoroughly cleansed, the bile will be injured, and the result will be costiveness or unnatural looseness, or cholera, all of which expose the sufferer to imminent danger. That Kaye's Worsdell's Pills may be used with success has been proved in hundreds of cases.

Joseph Murray, Grundy-street, Poplar New Town, says:—"I suffered for several years from a severe bilious disorder, attended with loss of appetite, and great depression of spirits, even to such a degree that I was unable to attend to any kind of business. In this state I was recommended to try yeur pills, and have been truly astonished at their miraculous effects; for by their many years, and now, thanks to your pills, my health is completely re-established."

### WORSDELL S VEGETABLE PILLS.

ELLEN EGGLESTONE, Feling-bridge, near Bishop Auckland, was afflicted with disease of the bowels for two years. By taking one box of Kaye's Worsdell's Pills she was restored to perfect health. Mrs. W., of Ewelme, Wallingford, writing to Mr. C. J. Venimore, says :- "I believe Kaye's Pills

eaved my life last summer, when I was attacked by English cholera.

Mrs. Kershaw, Angel-meadow, Heywood, was recommended to use Kaye's Pills for the colic, and a bilious complaint with which she was afflicted; after taking only one box of them her health has greatly improved.

Mrs. Walstenholme, Hurtfield, Heywood, was sorely troubled with bile; having received great

benefit from the use of Kaye's Worsdell's Pills, she recommends their use.

Mr. A. M. Lyons, formerly of Omagh, says: - "I suffered for a long time from severe inflammatory bowel attacks, a worm complaint, and biliousness; and less than one box of Kaye's Worsdell's Pills cured me of these ailments, and I never enjoyed better health than I did after taking them. I believe these pills to be the safest, cheapest, and best medicine in the world."

### LIVER COMPLAINTS.

These arise from a deposit of morbid humours, inducing a sluggish or inflamed state of the liver, resulting in want of appetite, costiveness, acute pains in the side, and other dangerous symptoms. The use of Kaye's Worsdell's Pills will promote free and regular discharges of these humours, will

relieve the pain in the side, and, where there is no actual decay, effect a complete cure.

VALENTINE Mold, of Middleton Cheney, Northamptonshire, three miles from Banbury, was fors long time most severely afflicted with liver complaint, with frequent vomitings. received any benefit from medical men at home, in hope of obtaining relief he became first an in and then an out patient of the Northampton Infirmary; but he gradually grew worse, and, on his last application, the doctors told him they could do no more for him, giving him up as incurable. At last he was so greatly weakened and emaciated, that he was entirely confined to his bed. Whilst in this state, his wife heard of Kaye's Worsdell's Pills, and came to my house to make further inquiries; and although despairing of his obtaining any benefit, she resolved he should give them a trial. He began by taking three pills the first night, and increased one every night up to eight. When he had taken two or three boxes he was greatly relieved, and after taking ten or twelve boxes a perfect cure has been effected; and he is now in the enjoyment of excellent health and spirits. His wife called upon me to-day, and said he was as well as ever he was in his life, and was desirous that his case should be made public for the benefit of others.

JOHN MANLOVE, gardener, St. Alban's, has suffered very long with a liver complaint. After

taking two boxes of Kaye's Worsdell's Pills he was quite restored to health.

JAMES SMITH, of St. Gregory, Norwich, suffered for many years from violent pains in the body, and diseased liver. He has experienced the most beneficial results from a continued use of Kaye's Worsdell's Pills.

### DISEASES OF THE LUNGS-CONSUMPTION-INFLUENZA.

These are caused by the accumulation of impure humours; and if they be not speedily expelled from the blood-vessels of the lungs, inflammation, cough, difficulty of breathing, and asthma, will ensue; and a foundation be laid for consumption and decline. It is pleasing, however, to know that by the timely use of Kaye's Worsdell's Pills relief may be afforded, and, where there is no organic disease, a cure effected.

Mr. Banks, of 37, Copperas-hill, Liverpool, writes that a friend of his had a very severe attack of influenza. He was troubled with a constant running from his nose, and his eyes were so affected as to lead him to fear the loss of sight. He tried hot drinks, additional blankets, &c., in vain. One morning he took six of Kaye's Worsdell's Pills, and at night five more; and the following morning,

to his astonishment and delight, he had not a vestige of the complaint left.

JOHN WOOD, Markington, Yorkshire, was very ill with a bad cough, attended with spitting of blood. He was so weak as to be unable to attend his work. The doctor pronounced him to be in a deep decline. By taking two or three boxes of Kaye's Worsdell's Pills, he was restored to his former health. His cure has been the means of greatly promoting the sale of the Pills. A youth named WILLIAM KNOWLES was affected in a similar manner, and was brought, to all appearance, very near to death, but by taking a few boxes of the Pills he also was restored to health.

Mrs. Kershaw, wife of a woolcomber, Shibden, near Halifax, had been for a number of years afflicted with an abscess. Having derived no benefit from medical advice, she was induced to try Kaye's Worsdell's Pills: she found considerable relief while using the first box; and, by the time

a second was taken, a cure was effected.

### DROPSY

This preternatural swelling, occasioned by a collection of watery humour, is most painful and disqualifying. It proceeds from a variety of causes; but the power of Kaye's Worsdell's Pills to remove it has been wonderfully demonstrated.

Daniel Goodman, 4, Snowden-street, North Liverpool, was dreadfully swollen with dropsy, and unable to attend to his business. Professional aid was tried without any relief. A friend recommended Kaye's Worsdell's Pills to him, and by the time he had taken one boxful, he was astonished to find himself quite well. He has since been able to attend to his employment with great comfort.

MARY, the wife of John Fetlow, carrier, of Delph, Saddleworth, was afflicted with dropsy till the became almost twice her usual size, and her condition was truly deplorable. While in this state she took a few of Kaye's Worsdell's Pills. She expresses her thankfulness for being comletely restored to health by using them; and as she believes that, under Providence, she owes her life to them, she will cheerfully answer any inquiries for the satisfaction of others.

### BOILS, SORES, SCURVY, AND OTHER SKIN DISEASES.

These all proceed from a corrupt and vitiated state of the blood; and, however lotions and ointments may be resorted to, no cure can be effected till the system be thoroughly cleansed. This office is speedily performed by the use of Kaye's Worsdell's Pills. Not only is healing promoted, but the skin is cleared, and a healthy hue imparted to the complexion.

RANCIS DUNNING, farmer, of Snilesworth, was for many years afflicted with a sore leg. trying many means of relief in vain, he was induced to make trial of Kaye's Worsdell's Pills; he soon became better, and in a short time, by persevering in the use of them, he was able to follow

his employment.

The WIFE of JOHN JONES, mason, Carnarvon, was long afflicted with severe cold and scurvy. By

the use of Kaye's Pills she has quite recovered.

DMUND SCOTT, Monmouth, had a very bad wound in his leg for nearly twenty years. Though he had been under several doctors he got so little relief that he could not walk without the aid of a stick. He had given up his case as incurable, when he heard of Kaye's Worsdell's Pills; he tried them as a last resort, and after taking three boxes he was perfectly cured. He lately walked fourteen miles to tell a friend of his cure, declaring that he never was better in his life, and that he was desirous of his case being made known for the encouragement of others.

Morgan Evans, tailor and draper, of Tredegar, Monmouthshire, had several wounds in his leg, some of them of many years' continuance. By the use of a few boxes of Kaye's Pills, he was

restored to perfect health.

RHEUMATISM, GOUT, TIC DOLOREUX.

The acute pain, wasting, and debility, attendant upon this class of disorders, may all be traced to diseased deposits and impurities of the blood, and till these are removed no outward applications will afford more than mere momentary relief. KAYE'S WORSDELL'S PILLS have, in innumerable been found an effectual remedy.

Mr. Nicholas Taylor, Lichdon-street, Barnstaple, was formany years afflicted with rheumatism; attended with excruciating pains in the nerves and muscles, and could scarcely ever dress himself without assistance. After taking one box of Kaye's Worsdell's Pills he was freed from pain, and by

occasionally using them he has continued so ever since

ELIZA DICKINSON, of Lockington, was dreadfully afflicted for four years with tic doloreux, and applied to several medical gentlemen without effect. She was completely cured by the use of ye's Pills.

CATHERINE CLARKE, of Littletown, Durham, was cured by the use of these pills, after being so afflicted with rheumatic fever as to be rendered quite helpless.

TO FAMILIES.

For FAMILY Use these pills are invaluable. Mr. and Mrs. HEAD, of New-street, Woodbridge, Suffolk, write thus:—"We have pleasure in recommending Kaye's Worsdell's Pills, having used them ourselves during the last eighteen months, and proved their efficacy in removing pain, restoring the stomach to its proper tone and energy, and improving our general health. We also consider them an excellent medicine for children of all ages, having tried them in our family with great success. In short, whether for adults or children, their beneficial invigorating properties entitle them to be ranked amongst the best medicines ever offered to the public."

TO PERSONS ABOUT TO EMIGRATE.

A most important appendage to an Emigrant's store is a good supply of Kaye's Worsdell's Pills. On ship-board these pills will be found invaluable in keeping the stomach and bowels in a regular and healthful state, purifying the blood, and thereby preventing cutaneous diseases, such as scurvy, Incidental to long voyages. By attending to the directions given with each box, they may be safely taken by infants, adults, or persons in advanced age. When settled in distant climes, the emigrant will find in these pills all he can require in the form of medicine, both for the preservation and recovery of his own health and that of his family. They will keep good in all climates, and any person proceeding to the Colonies will find it profitable to take a supply out.

IMPORTANT CAUTION.

Be careful that you are not imposed upon by spurious imitations; the genuine have the words "Worsdell's Phile, by John Kaye," engraved on the Government Stamp; and, as a further protection, Mr. Kaye's coat of arms, and a fac-simile of his signature, are printed on the directions wrapped round each Box, and to imitate which is felony.—Sold in Boxes at 1s. 11d., 2s. 9d., and 4s. 6d. each, by at least one Agent.

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Cette machine est la seule qui ait jamais été inventée qui puisse donner aux plis une égalité parfaite; et le principe en est protégé par un brevet d'invention qui s'étend par tout le Royaume Uni, les Colonies, et l'Europe entière.

Les conditions, &c., peuvent s'obtenir en s'adressant à l'agent de Londres, M. M. T. Raymond, 8, Exeter Change, London. On fabrique la machine pour des personnes soit dans le Royaume Uni soit à l'étranger.

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(Procédé Roseleur et Moucher.)

FONTE ARGENTINE.

que avec une égale facilité à tous les que le fer, l'acier, la fonte, le zinc, le recouverts à peu de frais d'une couche métaux ou leurs alliages; c'est ainsi plomb, l'antimoine, etc., peuvent être tère en rien ni leurs formes, ni leurs L'étamage par voie humide s'applid'étain qui, modifiant profondément leur aspect et leur oxidabilité, n'alcuit, la sonorité, le recroui ou la propriétés essentielles, comme le retrempe.

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ABOUT SUNDRY

ARTICLES MANUFACTURED BY E. BOUCHER ET CY.

Rue des Vinaigriers, 15, in Paris.

Patent right in Great Britain. — Brevets in France several foreign countries. REWARDERD BY SILVER MEDALS IN 1844 ET 1849.

MM. R. Boucher et Cy sent to the great London Exhibilion:

1º Silver-coloured cast-iron; — 2º specimens of electro-chemical, inted-over all meths; — 3º specimens, sil-vered-over, without making use of neither calorifies no electrical powers; — 4º truckies of a new kind; — 5º balkes for straps, under wisitoods, etc; — 6º Spiral sping truatiess fort household goods; — 7º zinc wire of all sizes; — 8º rustless wool-comb's wire.

# ELECTRICO-CHEMICAL OVER-TINNING.

(Roseleur and Boucher's process.)

# SILVER-COLOURED CASTINGS.

Tinning, may be performed through damp means with alike readiness over all metals, or mixtures of the said: so, mony, etc., may be tin-over covered with but a triffing expense; this tin stratum shall greatly modify the under metal's appearance und rusting propensity; but it will not any way alter its most essential properties, as nealing, sonorousness, hardening or temiron, steel, cast-iron, zinc, lead, anti-

## NOTIZ ÜBER DIE PRODUKTE

HERREN BOUCHER UND COMPAGNIE,

SILBERNE MEDAILLEN DER AUSSTELLUNGEN VON 1844 UND 1849 Fabrikanten in Paris, Rue des Vinaigriers, nº 45. Englische, französische und fremde Patente.

Die Berren Boucher und Comp. haben folgende Waaren zur englischen Ausstellung geschickt:

1º Verzinnte gusseiserne Koeltgefasse; — 2º Proben de elektro-chemischen Verzinnens auf allen Metallan; — 3º Proben von Versulberung ohne Wärne und ohne Riektrizität; — 4º Neue Art von Rollen; — 5º Schmellen für Weich, flosenfager u. s. "..., — 1º Creschiere Springfeden für Möbel; — 7º Gesponnenes Zink von allen Durchmessern; — 8º Unrostbarer Kratzendraht.

### ROSELEUR UND BOUCHER'S

ELEKTRO-CHEMISCHE VERZINNUNGSWEISE.

Das Verzinnen auf nassem Wege wird mit gleicher Leichtigkeit bei allen Metallen oder ihren Legierungen angewendet; Eisen, Stahl, Gusseisen, Zink, Blei, Antimon u. s. w. können mit wedeckt werden, welche, indem sie ihren Anblick bedeutend verändert, auf keine nig Kosten mit einer Schicht Zinn be-Weise ihre Formen noch ihre Eigenschaften, wie das Harten und Nachlassen angreift.

Quand cet étamage s'applique à la fonte façonnée comme vase culinaire, il constitue un véritable produit nouveau que nous connaissons en France, où il se fabrique sur une large échelle, sous le nom de fonte argentine. C'est alors incontestablement le vase culinaire le meilleur, le plus sain et le plus économique.

La fonte de fer, pendant les manipulations qui doivent la transformer en fonte argentine, s'est dépouillée de tous les éléments hétérogènes (soufre, phosphore, arsenic) qu'elle renfermait auparavant, ce qui fait que, même après la disparition complète de l'étamage, elle ne peut plus reprendre les propriétés nuisibles qui la caractérisaient antérieurement, celles de noirgréable les mets qu'on y prépare.

Ce produit se recommande donc à deux points de vue: celui de l'utile par l'assainissement radical de la fonte de fer, celui de l'agréable par l'éclat argentin qu'il présente tant à l'intérieur qu'à l'extérieur.

Quelques applications de l'étamage électro-chimique suffiront pour donner une juste idée de son importance.

Avec lui on peut:

- Fabriquer l'épingle en fer et lui donner l'aspect et l'inoxidabilité de celle produite en laiton;
- Fabriquer des fers-blanes de toute dimension ;
- Souder les tuyaux de fonte en coulant de la soudure sur deux bouts de tubes préalablement étamés;
- Étamer les toiles métalliques de

when this over-tunning is applied to the plain or ornamented castings, such as culinary vessels, this is quite a new industrial product, which is known in France ( where it is manufactured on a large scale), under the name of fonte argentine (silver coloured castings). It is then unquestionably the better, cheaper and more healthy culinary vase.

During the several manipulations, to transform into silver-coloured castings the genuine cast iron pieces, a very refining of the metal takes place; and all the heterogenous substances (as sulphur, phosphorus, or arsenic) that were at first mixed to the iron, are expelled; so that, even after the tin stratum is quite rubed out, the castrages can retain no more any of their former hurtful qualities, such as blackening and impregnating of a disagreable taste the meats prepared into them.

This product recommands itself by two ways; first by usefulness, the cast iron vessels being rendered wholesome: second by pleasing, since the said vessels instead of being of a dark appearance take a clear and pleasing hue, as well in, as out side.

Some applications of the *electro-che-mical tinning-ower* will be enough to give a true idea of its importance.

Through this tinning-over process the following articles may be manufactured:

- The iron headed pins, may be quite similar, and as rustless as the brass ones.
- Tin plates or sheets of all sizes can be easily made.
- The cast iron pipes may be soldered, by casting some soldering unto the ends or these pipes, being previously tinned-over.
- The wire cloth of any size may

arbeiteten Gusseisen, wie z. B. Kochgefässe, angewendet wird, bildet es
ein neues Produkt, welches in Frankreich, wo es vielfältig fabrizirt wird,
als fonte argentine bekannt ist. Diese
Kochgefässe sind unstreitig die besten,
billigsten und gesundesten.

Das Gusseisen hat während der Operation des Verzinnens, die in ihn enthaltener fremdartigen Theile wie Phosphor, Schwefel und Arsenik verloren, und kann, selbst nach der gänzlichen Abnutzung der Verzinnung, seine schädlichen Eigenschaften nicht wieder annehmen, welche darin bestehen, die Gerichte, die in derselben bereitet werden, zu schwärzen und ihnen einen übeln Geruch zu geben.

Dieses Produkt lässt sich daher aus zwei Gründen empfehlen: erstens wegen des Nutzens hinsichtlich der gänzlichen Gesundmachung des Gusseisens, und zweitens wegen seiner schönen silberähnlichen Ansicht, sowohl von innen als von aussen.

Einige Beispiele des elektro-chemischen Verzinnens genügen um eine richtige Ausicht von seiner Wichtigknit zu geben.

Man kann mit demselben:

Eiserne Nadeln fabriciren und ihnen den Anblick und die Unrostbarkeit der messingenen geben.

Weissblech von allen Grössen fariciren.

Gusseiserne Röhren zusammenlöthen, indem man Weichloth auf die beiden Ende der vorher verzinnten Röhren giesst.

Metallische Gewebe von allen Grös

be tinned-over without being afraid neither to obstruct the holes, nor to toutes dimensions et de tous numéros, sans craindre d'obstruer les trous, ni

-Blanchir et préserver de l'oxidation tous les articles de serrurerie, coutellerie, tuillanderie, quincaillerie, et en général toute espèce de chaînes, sans redouter le recuit ou l'empâtement, comme aussi sans souder les mailles;

- à feu et éviter l'emploi des corps gras - Préserver de la rouille les armes dans l'intérieur des batteries;
- térer leur rigidité, de très-grands ob-Etamer sans les dessouder ni aljets, tels que cuves, baignoires, etc.

Ce nouveau procédé se recommande encore par l'innocuité parfaite de ses manipulations, et par le peu de frais qu'exige son installation.

# NOUVEAU PROCÉDÉ D'ARGENTURE.

(Procédé Roseleur.)

sans le concours de la chaleur ni de tels que bronze, laiton, similor argenl'électricité, au cuivre et à ses alliages, tan, maillechort, etc.

L'opération de l'argenture, qui s'efdepuis 36 c. par kilogramme.

tools, hardware articles, etc., and generaly all kinds of chains, without niency of having the links clummy, or All the locksmith articles, may be rendered white looking, and rustless, as well as those of cutlery, edgedbeing afraid to encounter the inconvesoldered fast to one another.

- Fire arms may be prevented from rusting, using of greasy substances can so be avoided about the batteries.
- Any large thing, such as bathingtub, vat, etc., may be tinned-over without unsoldering, or altering the stiffness of them.

mendable on account of its being com-This new process is besides completly harmless in the needed manipulations, and also because its setting about is but of a little expense.

Ce procédé d'argenture s'applique,

fectue dans un liquide clair, limpide et inodore comme de l'eau, n'exige que quelques secondes et donne les résultats les plus magnifiques. Du dépendent et l'épaisseur de la couche d'argent et le prix de revient ; l'aspect gles, etc., peuvent être argentés ainsi temps que les objets restent immergés, seul n'est pas changé. De menus articles, tels que boutons, boucless, épin-

# A NEW SILVERING-OVER PROCESS.

(Roseleur's process.)

plied, to copper and mixtures of this metal, such as brass, bronze, similor, germonsilver, maillechiort, etc, without This process for silvering-over is apthe help of neither heat nor electricity.

takes place into a clear and limpid liwhich is as water, without any smell, requires but a few seconds to The silvering-over operation which give the handsomest results. quid,

rance after, as before the operation; fling price; from 30 centimes per ki-The thickness of the stratum, and of ther of the shorter or longer time the pieces are left plunging into the bath; and they can be silvered-over at a trismall things, such as buttons, buckles, pins, etc., do keep the same appeacourse the cost price, depends altogelogr (1,1/2 penny per pound).

sen und allen Nummern verzinnen, ohne zu fürchten die Löcher auszufüllöthen.

the wires together.

Kleinschmidt-Artikel, wie auch alle ohne das Nachlassen und das Anlöthen Schlosser-, Messerschmidt- und Arten von Ketten vor Rost bewahren, der einzelnen Glieder zu befürchten.

und die Anwendung der fetten Körper Feuergewehre vor Rost bewahren, in dem Innern der Batterien vermeiden.

Badwannen, u. s. w. verzinnen ohne Grosse Gegenstände, z. B. Kupen, sie zu entlöthen und sie weich zu machen.

lichkeit der Verarbeitung und durch Dieses neue Verfahren empfiehlt sich durch die vollkommene Unschäddie geringen Anschaffungskosten.

# NEUES VERSILBERUNGSVERFAHREN

VON ROSELEUR.

Dieses Verfahren wird bei Kupfer und seinen Legierungen, wie Bronze, Messing, Argentan u. s. w. ohne Hülfe der Wärme und der Elektrizität angewendet.

dem Wasser gleichen Flüssigkeit vorgeht, verlangt nur wenige Sekunden, Die Operation der Versilberung, welche in einer klaren, geruchlosen, und gibt die herrlichsten Resultate.

Von der Länge der Zeit während welcher die Gegenstände in der Flüssigkeit getaucht werden, hangt die Dicke der Silberschicht und der Preis ab; der Anblick aber bleibt immer derselbe. Kleine Gegenstände, z. B. Knöpfe, Schnallen, Nadeln u. s. w. können für 30 Centimes per Kilogramm versilbert werden.

tenue mate ou brillante; la beauté des produits ne peut être égalée que par ce que font de mieux MM. Elkinton à Birmingham, ou Charles Christofle à paris

Les substances employées ne participent en rien des propriétés toxiques qui caractérisent les cyanures et les prussiates.

### ROULETTES.

Toute roulette se compose essentiellement de deux parties: la chape ou monture, et le galet ou partie circulaire que sa forme rend propre à se mouvoir facilement.

galet, qui ne se faisait qu'en matières corne, gayac, etc., a été obtenu en garantie complète pour la solidité. Le découpée dans la planche de cuivre, que la chape, au lieu d'être fondue, et ne se rencontrait pas dans les rouletpar deux épaulements, à l'intérieur et mie. La goupille ou axe du galet fixé donc, encore là, luxe, solidité, éconoverre, porcelaine, cristal, etc. Ainsi pidement, comme ceux tendres, et que le frottement usait rapar conséquent fragile, a été par eux d'importantes modifications. C'est ainsi dans l'une et l'autre de ces parties tes jusqu'à ce jour. l'extérieur, a acquis une solidité qui MM. E. Boucher et Co ont apporté en cuivre,

# BOUCLERIE EN FER ET EN CUIVRE.

Les boucles de gilets, de pantalons, bretellus, etc., sont aujourd'hui fabriquées par MM. E. Boucher et C°, par

as one chooses, either of heavy, or shining hue; the beauty of these products are not to be compared to any, but to the finest articles manufactured by MM. Elkington in Birmingham, or Ch. Christofle in Paris.

The substances employed to operate, do not partake any how of the poisonous properties which are particular to the *cyanures* or *prussiat salts*.

### TRUCKLES.

Truckles of any shape are made of two chief pieces: the cope or frame piece, and the little cylinder or wheel, which piece, on account of its shape, is to revolve easily.

and rather luxuriant beauty. The little curity: the little wheels that were made ved way, which gives complete semeans as strong as it is in their improten metal, was brittle, and by no which piece made before this of molthey pink the cope out of a brass plate, important improvements in both of thus, here also, cheapness, strength made by MM. Boucher and Cy, of comas those made of brass, horn, gayac was quickly worn out by friction, such before, out of rather soft stuffs, which these parts of truckles; thus it is, that any where. in truckles that were manufactured dity that was not to be found till now, in and out side, is rendered of a solitwo circular grooves or collars, both both parts of the cop, by means of wheel's pin or axis set fast through mon or flint glass, china, etc., giving (or lignum vitue) wood, etc., are now MM. Boucher and Cy, made very

# IRON AND BRASS BUCKLES

Euckles for straps, pantaloons, waist-coats, etc., are now-a-day manufactured by MM. E. Boucher and Cy,

Belieben, matt oder glänzend erlangen. Die Schönheit der Produkte kann nur mit den besten der Herren Elkington in Birmingham und Christofle in Paris verglichen werden.

Die angewendeten Substancen sind nicht wie die blausauren Salze und Cyanmetalle giftig.

### ROLLEN

Jede Rolle besteht aus zwei wesentlichen Theilen: die Zwinge und die Rolle.

u. s. w. gemacht, und man erhält auf ten, und ist folglich sehr dauerhaft. ihnen aus einer Kupferplatte geschnitnicht bei den bis jetzt fabricirten Rol-Dauerhaftigkeit erlangt, welche man innen und aussen befestigt ist, hat eine Oekonomie. Der Stift oder die Axe der diese Weise Luxus, Dauerhaftigkeit und werden aus Glas, Porzellan, Kristal Reibung schnell verbraucht wurden, Guyaakholz machte, und die durch die Materialien, z. B. Kupfer, Horn und Die Rollen welche man früher aus zwei leicht zerbrechlich zu sein, wird von Zwinge, anstatt gagossen und folglich tige Veränderungen angebracht; die haben an jedem dieser Theile wichlen fand. Rolle, welcher durch zwei Ansätze von Die Herren E. Boucher und Comp.

### EISERNE UND MESSINGENE SCHNALLEN.

Die Schnallen für Westen, Hosen, Hosenträger u. s. w. werden jetzt von Herren Boucher und Comp. mittelst

procédés tellement économiques, qu'il leur est facile de vandre aux prix d'un franc le cent des articl genre en cuivre et argentés.

### TRÉFILERIE.

(Médaille d'argent en 1844.)

miers l'idée d'appliquer manufacturièrement à la tréfilerie les dépôts des minuer autant que possible les chances ainsi que leurs fils de fer cuivrés pour élastiques de meubles présentent, outre une belle teinte de cuivre qui les cela sans augmenter aucunement le aussi arrêtés par une agrafe brevetée naire; ces reseorts peuvent aussi, après MM. E. Boucher et C° ont eu les premétaux les uns sur les autrus, pour did'oxidation du métal sous-jacent; c'est serait croire de ce métal, une rondeur et une rigidité supérieure à tout ce qui s'obtenait par les procédés anciens, et prix de revient. Les élastiques fabriqués par M. E. Boucher et C° sont bien supérieure au tortillement du fil sur lui-même qui se pratique d'ordirecevoir l'étamage leur confection, électro-chimique.

### FILS A CARDES.

La carde se compose généralement triquement implantés dans une feuille d'une série de fils de fer raides, symélogue. Le fer, constamment au contact de l'humidité contenue dans la monture de la carde, ne tarde pas à s'oxider et à ne plus offrir aucune résistance. M. E. Boucher et Ce ont notablement diminué cet inconvénient, en substituant au fil de fer simple, ce couche essentiellement plus rebelle à 'oxidation; on arrive à ce résultat par de cuir ou toute autre substance anamême fil préalablement revêtu d'une l'emploi de fils étamés, cuivrés, laitonés, plombés, etc.

ticles of the kind, either iron or copper it is easy for them to sell some arones, for the trifling price of one frame for one hundred pieces.

### WIRE DRAWING.

(Silver medal in the year 1844.)

the under metal; accordingly thuir better than the twisting of the wire way practised elsewere; these springs MM. E. Boucher and Cy, hat the first ones the idea to apply on a large scale, at the wire drawing, the strata the rusting, or oxidation chances of coppered-over iron wire, for bed or copper hue, that many a one might mistake it for true copper wire: it is stiffer than all that, may be manufactured through old ways: this is done also by means of patented clasp, much around itself, which is the common recovered metals, in order to lessen seat spiral springs, shows so fine a besides very cylindrical, smoother and without increasing any the cost price. - The spiral springs manufactured by MM. E. Boucher and Cy, are made fast may also after they are so finished, be tinned - over through the electricochemical process.

## WIRE FOR WOOL-COMBS.

Wool combs are generally made with great many small stiffed iron wire pieces, symetrically stuck into a sheet of leather, or any analogous substance. Those iron wires constantly touching dampness within the comb's setting, shall not along while keep free from rusting; then they are no longer fit to resist. MM. E. Boucher and Cy, here again, have greatly lessened this inconveniency, by instead of common iron wire, making use of wire covered-over with tin, copper, brass, lead, etc.

through so plain and cheap ways, that | eines so ökonomischen Verfahrens verarlieitet, dans sie das Hundent dieser Artikel aus versilbertem Messing für 1 Franc liefern können.

### DRAHTZIEHEREI.

(Silberne Medaille im Jahre 1844.)

deckten Metalls zu vermindern. Ihre Springfedern sind runder und härter Springfedern, haben am Ende eine pabesser ist, als das Umdrehen des Drah-Sie können, wenn sie fertig sind, auf haben, das Niederschlagen der Metalle als die bis jetzt verfertigten, ohne theurer zu sein; und haben ausserdem einen schönen Kupferton, der glauben lässt dass sie ganz aus Kupfer sind. Die von tentirte Klammer, welche bedeutend tes welches man gewöhnlich anwendet. elektro - chemischem Wege verzinnt der Drahtzieherei anzuwenden, um so viel wie möglich das Rosten des beverkupferten Eisendrahte für Möbel-Herrn Boucher und Comp. verfertigten Die Herren Boucher und Comp. waauf einander, auf grossem Wege bei ren die Ersten, welche die Idee gehabt werden.

### KRATZENDRAHT.

Die Kratzen bestehen bekanntlich welche symetrisch in ein Leder eingestochen sind. Der Eisendraht, welcher beständig mit der Feuchtigkeit, welche aus einer Menge kleiner Eisendrahte. sich in den Kratzmaschinen befindet, in Berührung ist, rostet bald und bietet daher keinen Widerstand mehr dar. Die Herren Boucher und Comp. haben holfen, indem sie den einfachen Eisenhenden, Metallschichte bedecken; man gelangt hierzu durch die Anwendung draht mit einer, dem Roste widerstedes verkupferten, verzinnten, verbleidiesem Uebelstande bedeutend en un d dergl. Drahtes.

mis à leur genre de travail les métaux jusqu'ici réputés les plus réfractaires. C'est ainsi que le zinc, ce métal si cassant à l'état de fonte, s'est réduit sous leurs efforts en fil d'un délié et d'une souplesse tels qu'il peut aisément rivaliser avec le fil à coudre et le fil de plomb. Ce zinc ainsi tréfilé peut à son tour se transformer en toiles métalliques, grillages, etc.; c'est une véritable conquête pour la science et l'industrie.

S'adresser pour tous renseignements et pour traiter des brevets:

MM. E. Boucher and Cy, succeeded to break out to their manufacturing process, some of the metals till now thought not to be fit to yield: they tried on the zinc, this metal so brittle when melted; and after many endeavours, they succeeded to bring forth a wire so thin and flexible, as to be compared to lead wire, even to sewing thread, this zinc so drawn into wire, may, after that, be wrought into grates, metallic cloth, atc. This feat is certainly a true conquest for science and industry.

Apply for any further informations, and to treat for the Patent right:

Die Herren Boucher und Comp. haben zu ihrer Fabrikationsart die unschmelzbarsten Metalle anwenden wollen. Es ist ihnen gelungen, aus dem Zink, welches in gegossenem Zustande so zerbrechlich ist, einen dem Blei an Biegsamkeit gleichen Draht zu verfertigen; derselbe kann zu Metallgeweben geflochtenen Gittern, u. s. w. benutzt werden; diess ist eine wahre Eroberung für die Wissenschaft und Industrie.

Für Anweisungen und zum Verkauf der Patente muss man sich wenden:

A LONDRES: à l'Union purisienne

à M.

à M.

ET à PARIS à MM. E. BOUCHER et C°, rue des Vinaigniers, 15.

THE

### HEVALIER CLAUSSEN'S

PATENT CIRCULAR ELASTIC

### PETTICOAT,

Combines the following advantages: -it is

As warm as flannel,
Twice as durable,
One third the price.
Nearly ready made,
More easily mended,
Superior in appearance.

This Petticoat is considered to be one of the most extraordinary and useful inventions of modern times; it has been universally adopted by the Ladies of France, Germany, Belgium, and Italy, and is daily becoming a great favourite with the Ladies of England and America,—it is an immense saving to families.

It is manufactured both in the bleached or unbleached state; and may be had wholesale or retail of the Chevalier's sole Agent,

> GEORGE PHILPS, 18, Friday Street, Cheapside.

MANCHESTER.

Patent Felt Office, Ridings Court,

ा राष्ट्र वध्ये एस्टारी मार्क्सांट्रास . . क न्यंतः

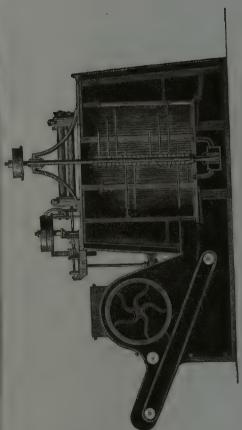
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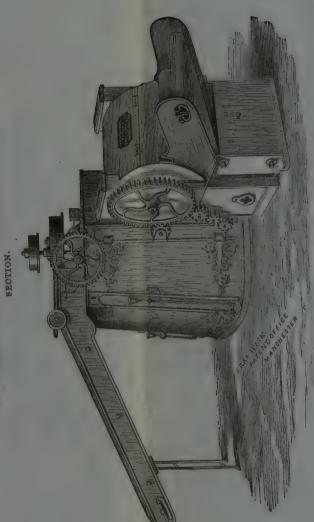
PARIS à MM. E. E

ET à PARIS à MM. E. BOUCHER et C°, rue des Vinaigriers, 15.

# COTTON OPENER

PRINCIPLE HARDACRE'S PATENT





VIEW.

MAY BE SEEN AT THE

# "EXHIBITION OF THE INDUSTRY OF ALL NATIONS," LONDON

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And at the Makers, CRIGHTON & Co., Great Bridgewater Street, Manchester.

ORDERS AND ENQUIRIES MAY BE ADDRESSED TO CRIGHTON AND CO.

orto JAMES SLATER, PATENTEE,

Patent Felt Office, Ridings Court,

MANCHESTER



# niding's court, st. mary's gate,

JAMES SLATER respectfully invites the attention of Spinners and Manufacturers to the newly invented ENGINES, patented by SAMUEL HARDACRE. COTTON-OPENER and improvements in CARDING

chine is thus effected, the Cotton being spread on the feed table, enters at the top, when by the nentrifugal force injury to the Stapla from the action of Points or Teeth; Third, The more effectual separation of Dirt, Seeds, and all other the sort of Catton,) it is opened and spread over the grids in the interior, through which the heavy dirt is expelled, extraneous matter; Fourth, Compact form and convenients in the mode of working. The operation of the maof the horizontal arms on the vertical shaft (revolving at the rate of from 700 to 1,000 per minute, according to the light being carried off by the draft; the Cotton then passes under the dust cage, and up the short creeper into batting stick in such a manner as to open 40,000 lbs. per week of 573 hours, requiring only 13 to 13 horses power. The principle of the COTTON OPENER is entirely new and original, being the application following are some of its advantages:-First, Economy in Power; Second, Perfect expansion of the Cotton basket on the floor. The improvement in CARDING ENGINES comists in a new mode of doffing by the substitution of a pair of Rollers for the ordinary Comb or Doffing-knife the surfaces of which moving continuously and uniformly with The inconvenience arising from the vibration of Springs and imperfect Cranks is also that of the cylinder, the parallel Urection of the fibres is retained, instead of being disturbed and crumpled jerking action of the Comb. awoided.

SLATER, he alone can The Patent Right of the above being assigned to the said JAMES



# EXPOSÉ SUR L'INDUSTRIE DE LA LAINE

PAR DESPLANQUES JEUNE, DE LIZY-SUR-OURCO,

Présenté à MM. les Membres de la Commission française pour l'Exposition de Londres.

MESSIEURS,

cupations; depuis dix années j'y consacre un dévoûment sans bornes, car, personne, plus que moi, n'a été plus affecté, plus profondément humilié et froissé dans préférence qui a eu pour effet d'apporter un si grand désastre dans cette belle et grande branche d'industrie que notre agriculture étuit parvenue à élever au suprême degré; et sans contredit, si nous possédions encorn cas types d'autrefois, L'amélioration et la question des laines ont sans cesse été l'objet de mes préocses intérêts par la préférence accordée par nos fabricants aux laines étrangères, nous pourrions nous vanter d'avoir la plus belle laine du monde.

Notre agriculture, vers 1843, s'est tellement émue de la décadence de cu produit de son exploitation, non moins important pour elle-même que pour les commerçants qui le lui achètent, qu'elle s'est formée en congrès pour en rechercher les causes. C'est alors que je me suis dévoué à fournir, chaque année, dans les congrès expériences pratiques; et m'appuyant des travaux de personnes compétentes dans qui ont auivi, dans divers comices et sociétés d'agriculture, le résultat de mes chuque question, j'ai pu répéter au congrès de 1847 ce que j'avais déjà dit dans les congrès précédents, que le délaissement de nos laines et la préférence accordée à la laine étrangère, venaient des cinq faits suivants: que dans notre pays on ne savait ni lu produire, ni la recueillir, ni la classur, ni la laver, ni la sécher.

tion, la production; j'ai en outre mis sous les yeux du bureau le résultat de la décardés, et un nouveau système de peignage manuel, qui tous doivent faire partie deux autres systèmes mécaniques propres au lavage et au dégraissage des tissus machines que j'ai l'honneur, Messieurs, de vous soumettre en même temps que propriété aux yeux des personnes consciencieuses et bien renseignées; moyens et dégraissage de la laine à peignes, c'est-à-dire à mèches conservées, et qui sont ma par un progrès et des besoins nouveaux, peuvent à la fois servir au lavage et au février 1842, et que j'ai complété en 1844 seulement : moyens et machines qui, deuxième est le perfectionnement inséparable de l'invention, dont le brevet est de mière comprend le moyen manuel, résultat de l'invention de juin 1841, et la pratiqué sur le dos de l'animal; découverte qui se compose de deux parties: la precouverte d'un nouveau procédé de lavage qui avait pour effet de tenir lieu de celui En 1845, je remis au congrès de Senlis un mémoire qui traitait la première ques

qui ne trouvait pas preneur à 7 fr. 50 c. à Elbeuf, a étévendue 11 fr. dans les fabriques du lavage à dos; et c'est encore à l'étranger, qui ne lave pas autrement, qu'il fallait qui se tondaient en suint, et qui trouvaient par là un nouvel emploi dans la fabrià dos; ce fait a été prouvé par eux. Et cependant, j'ai été dépossédé d'une découde Reims et du Nord; dissérence énorme qui se faisait également sentir entre les qu'elle a pu être employée pour les tissus mérinos; et il est vrai de dire qu'une laine quoiqu'avec des produits imparfaits, une valeur de 12 à 15 p. 0/0 supérieure, parce la fabrication des tissus cardés, a trouvé immédiatement, au début de l'invention, possédions dans nos localités, aux environs de Meaux, la première laine du monde recourir pour remplir les besoins toujours croissants des fabricants, quoique nous dégraissage de la laine à mèches conservées, qu'on obtenait seulement au moyen cation des mérinos et mousselines-laines, fabrication qui exigeait le lavage et le juin 1841, l'avantage immense de procurer un débouché nouveau à toutes les laines cédés n'ont pas de caractère ingénieux et utile, contrairement à l'avis d'hommes produits des cultivateurs qui tondaient en suint et ceux des cultivateurs qui lavaient torités industrielles et agricoles. compétents judiciairement consultés, et malgré les nombreuses attestations des auverte qui dounait de pareils résultats, par un jugement qui déclare que mes propour ces tissus. Il est résulté de cette découverte, que la laine forte, si nuisible dans de mon exposition à Londres. Quant à l'invention qui remplace le lavage à dos, elle offrait, à l'époque du

ment, remèdes à y apporter. titre : Renseignements sur la production de la laine, causes de son délaisse-En février 1844, je remis au congrès agricole une brochure qui avait pour

remettre au congrès de Senlis, ainsi que l'indication des résultats que j'avais ob-En tête de cette brochure se trouvait le mémoire que j'avais en l'honneur de

tenus de mes nouvelles expériences.

été heureuse sous le double rapport de la laine et de la viande. On a reproché à la J'y traitais la question de la production des croisements anglais, qui n'a pas de serlis un mémoire qui traitait la première ques-

elle était recueillie, car la tonte, qui aurait du avoir lieu en mars on avril (comme laine sa grandu dureté, et il ne pouvait en être autrement avec la manière dont dans le nord, aux environs de Cambrai), n'a été faite, en général, que du 10 au 30 juin; mauvaise condition donnée à la laine, en France, contrairement à ce qui se fait en Allemagne. Pour attirer particulièrement l'attention sur cette amélioration dans la tonte et sur tous les inconvénients du système contraire, j'ai exposé des laines en 1844.

tion, et d'un moyen de faire bonne concurrence aux laines étrangères, qui n'était autre que d'accorder la préférence, pour notre habillement, aux tissus fabriqués Dans cette même brochure, je parlais d'un projet que j'ai mis depuis à exécu-

avec les produits de notre pays.

port, qui éprouvassent les mêmes sentiments que moi, pussent trouver dans chaque ville un dépôt de tissus nationaux. J'ai donc à cet effet remis chez des marchands de toiles des villes de Meaux, Soissons, Compiègue, Amiens, Lille, Roubaix, Provins, la Ferté-sous-Jouarre, Paris, des tissus de tous genres, de toutes sabriques, provenant des produits du sol et confectionnés par nos meilleurs fabricants; j'ai même poussé la persévérance jusqu'à porter à 136,000 fr. le chiffre Je voulais enfin que les bons patriotes, et j'en ai rencontré peu, sous ce rapde cette opération.

La plus grande dissiculté qu'a éprouvée la réalisation de cette entreprise a été celle-ci : le commerce des draps est aujourd'hui passé dans les mains du tailleur sournisseur, qui ne demande que l'apparence et le bon marché, et nvec la conscience qui avait été apportée à la fabrication de ces tissus, il ne pouvait en être ainsi; mais ce projet n'offrait pas moins les résultats suivants pour le producteur, le consommateur et les intérêts du pays.

quel j'accordais un bénéfice net de 2 fr. par mètre; il me donnuit un drap de 15 à 16 fr., d'un tissu comme on n'en fait plus aujourd'hui, et que beaucoup de con-La laine fine, si délaissée, et qui ne pouvait se vendre plus de 10 fr. 50 c. le kilogramme, était par moi remise au prix de 14 fr. à un fabricant consciencieux, ausommateurs voudraient pouvoir trouver au prix de 22 fr., car si l'idée était creuse, le drap n'en était pas moins plein; mais en France, rien ne réussit plus dissilement que les bonnes choses; elles rencontrent sans cesse de l'hostilité.

Considérations générales sur l'industrie lainière, dans lequel, après avoir parlé de la production et de la consommation, je traitais la question du droit d'entrée et celle des débouchés. Ju lui adressai en outre une note séparée, que j'ai reproduite dans ma seconde brochure, distribuée au congrès de 1847, et dans laquelle j'expose les avantages que notre agriculture retirerait du croisement de certains types, En 1845, je remis au conseil général de l'agriculture un manuscrit intitulé et les résultats qu'on obtiendrait si de plus grands soins étaient donnés à la laine.

Quant aux types et à la nature des troupeaux, je ne puis en parler avec la même assurance, l'agriculteur étant plus apte à apprécier ce qui convient le mieux à son sol. Mais, ainsi que je l'ai déjà dit, les avantages qu'offre la tonte faite du 25 avril

qu'au consommateur. à en juger, depuis celle qui fait le commerce du mouton pour la boucherie, jusau 25 mai sont immenses et incontestables aux yeux de toutes les personnes apres

qui ont suivi naturellement cette voie, et l'on verra si les résultats obtenus pour seigne auprès des cultivateurs qui se sont rendus à mes conseils et auprès de ceux tout ce qui a rapport au mouton ne sont pas de véritables progrès. compense, en même temps qu'ils soutiennent ma persévérance. Que l'on se rentiennent les personnes qui suivent mes indications, sont pour moi la plus belle répas de persécutions. Mais si de ce côté il y a déboire pour moi, les avantages qu'obn'était pas si hostile à ceux qui se dévouent au progrès, et si on ne les abreuvait A cet égard, dans nos localités, nous serions déjà beaucoup plus avancés si l'on

à 15 p. 070. Leurs produits, qui étaient en grande partie vendus pour la confection difficile de soutenir ma concurrence, et qu'elle leur a procuré une plus-value de 10 trouvé leur emploi dans les plus belles nouveautés de Sedan, concurremment avec constaté pour rendre hommage à la vérité, que depuis ma découverte, il a été à la ronde, qui produisent dans de bonnes conditions, savent bien, et ils l'ont cédé de lavage à la laine des agneaux; tous les agriculteurs de quinze à vingt lieues la laine des agneaux d'Allemagne, la seule que ces fabriques employaient alors. de tissus de peu de valeur, tels que coux fabriqués à Mouy (en Picardie), ont J'ai la preuve évidente d'un fait, c'est la réussite de l'application de mon pro-

ainsi, et qu'il n'est qu'un accessoire; que ce résultat provient de ce qu'en France avant la sortie des troupeaux. tissus; avantage que l'on obtiendrait dans la laine des mères, si on les tondait belles conditions de douceur, de blancheur et de moëlleux qu'on trouve dans les moment de sa tonte, il ne sort pas de la bergerie; ce qui donne à la laine les contrées qui produisent bien, depuis l'époque de la naissance de l'agneau jusqu'au la laine des agneaux est mieux recueillie que celle des mères, attendu que dans les même qui offre ce beau résultat. Eh bien! moi, je réponds qu'il n'en est pas Beaucoup de personnes peuvent croire que c'est mon procédé de lavage par lui-

a pour esset de la disposer à un dégraissage parsait, après un mois de balle sculelieu dans toute autre condition de suint, de lavage à chaud ou de lavage à dos de nos nouveautés de printemps, qui commence en juillet; ce qui ne peut avoir ment, et par là il offre l'avantage de la faire entrer de suite dans la fabrication lavage doit être appliqué à la laine des agneaux aussitôt après la tonte, puisqu'il sage complet qu'exige la fabrication; pourtant je dois dire que mon procédé de le fabricant prendrait la laine à l'état de suint, et lui ferait subir le dégraisauquel je ne puis que répéter aujourd'hui ce que j'ai déjà dit et écrit, c'est que la qu'il ne peut y avoir de bons lavages, soit à dos, soit par quelque procédé que détruire? c'était le lavage à chaud des marchands de laine; d'où il faut conclure tonte étant faite dans les conditions que j'indique, tout lavage serait supprimé; ce soit, si la laine est mal produite; tout le succès dépend donc de l'agriculteur, Cette belle et bonne production n'est pas nouvelle, mais qu'est-ce qui venait la des difficultés du dégraissage, que pour les nouveautés d'hiver, et l'on sait que la et de Louviers depuis dix ans. (Voir à cet effet, au nombre des attestations laine servant à cette fabrication est toujours payée 10 à 15 p. 0/0 meilleur marché. C'était encore la laine des agneaux d'Allemagne de l'année précédente qui venait prendre la place de celle que j'ai pu livrer à nos habiles fabricants de Sedau industrielles, celles de nos principaux acheteurs: MM. Nicolas Raulin, de Montagnac, Jourdain et autres.)

C'est avec ces résultats que je suis arrivé au congrès de 1847, délégué par la société d'agriculture de Meaux et en mesure de donner les renseignements les plus l'ai fait une exposition de nos laines et de leurs produits, pour démontrer les causes utiles sur tous ces points. J'ai été installé dans un des bâtiments de la Sorbonne, où de leur délaissement et indiquer les améliorations déjà obtenues et celles qu'on pouvait obtenir encore; exposition telleque Versailles même en ferait difficilement

a eu lieu. Cette commission a tout visité avec la plus grande indifférence, et pour toutes paroles d'encouragement, elle est venue dire à l'inventeur, en prenant ses Sans doute on pouvait croire que l'inventeur Desplanques recevrait quelques d'examiner cette exposition et qui était composée d'agronomes, présidés par MM. Fouquet d'Hérouel et Auberger, et d'industriels qui avaient à leur tête MM. Charpentier, Courtain, Grandin et Mimerel. Eh bien! c'est le contraire qui congrès, qu'elle ne croyait pas devoir faire de rapport, ne reconnaissant pas l'utide MM. Gomart et Bochart), à Melun, (renseignements auprès de M. Luc de paroles d'encouragement et de félicitation d'une commission chargée par le congrès arguments dans une décision judiciaire qu'on s'était empressé de faire connaître au lité de sa découverte. Et cette hostilité, je l'ai rencontrée dans tous les comices, dans les sociétés d'agriculture, à Meaux, à Saint-Quentin (renseignements auprès Fourches). Je n'ai pas été mieux traité dans les expositions de 1844 et de 1849. Les rapports favorables que j'ai obtenus dans la première out été dictes par la force des choses (renseignements auprès de M. Moll); et dans la seconde, pas un mot de la machine à dégraisser qui constitue aujourd'hui mon principal succès, pas une ligne sur mon exposition de tissus; M. Yvart, seul, a su apprécier mes procédés; enfin, partout où je devais attendre justice comme inventeur, on me l'a refusée; l'Echo agricole lui-même n'a cessé de me persécuter.

Ces hostilités, ces déboires, n'ont fait qu'augmenter ma persévérance, et j'ai redoublé d'efforts pour mettre nos laines en état de ne plus redouter la concurrence étrangère, et pour hâter les progrès d'une industrie qui laissait tant à désirer et qui était complétement perdue en France pour les laveurs de laines.

Reconnaissant le lavage inutile, nuisible même à la laine, surtout dans la fabrifaire usage de savon au lieu d'eau chaude ou d'eau froide. Si cette idée u'a pas été cation du peignage, je me suis appliqué à mettre en pratique l'idée que j'avais du dégraissage par le savon de la laine à mèches conservées, opération qui consiste à

sage de la laine, quel que soit le système que réclame chaque genre de tissus. opération. La tirette de Ponsart a été par moi perfectionnée, et alle fera partie de travail du peignage 250 à 300 ouvriers, et d'en occuper 150 à 200 à une seconde avaient été faits à différentes reprises, et dans laquelle j'ai réussi à l'aide de l'intelblissement du peignage à la main; industrie pour laquelle des essais infructueux suivie plus tôt de sa mise à exécution, c'est que l'occasion m'en a manqué; mais aumon exposition avec tous les appareils et machines propres au lavage et au dégraisligente tirette de Ponsart, de Jendun, près Mezières, qui m'a permis de former au jourd'hui, je fais l'application de ce procédé par suite de l'importation dans mon éta-

nos grands manufacturiers s'empressent d'avoir recours. Dans tous les cas, ce sera qui voudrait voir l'ouvrier de la campagne occupé, au sein de sa famille, aux tions dues à cette déconverte ne penvent que secondur les vues du gouvernement, çaient-ils, à cause de la douleur qu'ils éprouvaient dans les doigts. Les améliorail fallait plusieurs mois pour y parvenir; encore, la moitié des apprentis y renonmer en peu de jours, grâce à lui, un ouvrier peigneur. Par le système ordinaire, diminue les pertes du fabricant qui tient à faire des apprentis, et qu'on peut forrésister le plus longtemps. le nouveau système de la tirette Ponsart, par moi perfectionnée, qui devra lui primé par la mécanique, qui fait chaque jour de nouveaux progrès, et à laquelle travail manuel dont je viens de vous entretenir ne soit bientôt complétement supouvriers de nos campagnes et ceux des villes. Mais il est bien à craindre que le car mon expérience m'a mis à même de juger quelle différence existe entre les travaux de l'agriculture et de la laine, résultat précieux dans l'intérêt des mœurs; Rien n'est donc plus heureux que l'invention de ce petit instrument, puisqu'il

avoir, dans l'intérêt de l'industrie française, sur la matière première, la laine. France des améliorations que je viens d'indiquer et des résultats que mes découvertes ont obtenus, j'ai à vous entretenir de l'influence qu'elles peuvent encore Après vous avoir parlé, Messieurs, des avantages qui résulteraient pour la

et augmente d'une manière considérable ses frais de transport, brouillées et mal séchée, ou bien nous la recevons en suint, ce qui la fait jaunir, plutôt à la fabrication des tissus peignés, qu'à celle des tissus cardés; tandis que moins à souffrir que les nôtres, une quantité considérable de laine qui convient livrée après avoir été lessivée dans des eaux extrêmement chaudes, lavée à mèches conservées, soit à dos, soit par tout autre moyen qui en tienne lieu, elle nous est la fabrication à laquelle cette laine est propre, exige un lavage à froid à mèches L'Espagne importe chez nous, dans des conditions dont ses intérêts n'ont pas

bien mon lavage ust facile et quels avantages on en retire, de grands propriétaires toujours l'opération est manquée. Aussi, j'espère qu'après avoir vu à Londres compour venir trouver un cours d'eau; ces troupeaux souffrent beaucoup : presque lement à désirer à cause des distances immenses que les troupeaux ont à parcourir ditions, que le lavage ait été fait à dos ou à chaud; son lavage à dos laisse généra-Quant à la Russie, toutes ses laines nous arrivent aussi dans de mauvaises conde ce pays traiteront avec moi de mon procédé, différents en cela decertains laveurs

Le lavage à chaud de la Russie présente le grave inconvenient de cordonner et crisper la laine, ce qui nuit considérablement à la filature.

Quant à l'Allemagne, je n'ai pas plus d'améliorations à lui demander que je n'ai qu'elle a adoptée pour la tonte, ont toujours été les bases sur lesquelles je me suis d'espoir de lui faire accepter mon lavage, attendu que la bonne condition dans laquelle elle produit la laine, le bon lavage à dos qu'elle lui applique, l'époque appuyé pour donner à nos agriculteurs des renseignements si utiles à leurs intérêts.

posa de prendre en France, à l'occasion de l'exposition de 1849, l'initiative de Aussi me suis-je réjoui lorsqu'en 1848, M. le ministre du commerce Buffet prol'entreprise glorieuse que l'Angleterre se prépare à exécuter, et m'empressai-je de développer dans un mémoire que je lui adressai les raisons qui me faisaient désirer une exposition universelle. Car je voyais là une lutte égale de l'industrie de rations; je ne doutais pas que dans ce brillant concours notre agriculture si daient encore les beaux troupeaux qu'ils avaient de 1820 à 1835, ils compenseraient toutes les nations, d'où devraient nécessairement procéder de grandes améliointelligente ne fût à même de lutter avantageusement avec l'étranger, notamment avec les produits de ses laines, et je prévoyais qu'il en résulterait la suppression d'un droit protecteur qui convient peu au caractère français vis-à-vis de l'étranger. Et à coup sûr si les cultivateurs, ceux de nos localités notamment, possépar le prix de leurs laines le déficit qu'ils éprouvent aujourd'hui dans la vente de

Après avoir rempli la tâche que je me suis imposée, de rendre service à mon pays dans la question des laines, qu'il me soit permis de dire que j'ai payé ma dette dans les circonstances difficiles que nous venons de traverser, car je me ferui toujours honneur de la mission qui m'a été confiée par M. le commissaire du gouvernement, à Meaux, qui, en me chargeant de ses dépêches pour l'Assemblée nationale, m'a donné l'occasion de juger du triste spectacle qu'offrait la capitale pendant les journées de juin (le 25, à 7 heures du soir). Je n'oublierai jamais ce moment sublime où un grand homme fut agité à la fois par des émotions si diverses; à l'instant où une femme, à ses genoux, implorait la grâce de son mari, un drapeau lui est apporté par l'intrépide Martin, qui vient de l'enlever à la barricade du Temple; le général détache aussitôt sa croix, et la met sur la poitrine du vaillant garde mobile; à peine y était-elle attachée, qu'on lui annonce la mort de son frère d'armes, le général Négrier. Il s'arrache à la douleur qui l'oppresse pour me tracer ces lignes: Les gardes nationales de l'arrondissement de Meaux entreront dans Paris par la route qui leur sera indiquée par M. Desplanques. Signé, Gal E. Cavaignac. Et il ajoute ces paroles : Rassurez vos campagnes; demain à midi la lutte sera terminée; n'ayez pas peur de dépenser, le gouvernement paiera. Et l'on ne peut pas dire que je sois allé réclamer mes dépenses, ou chercher une récompense; la seule qui m'ait été donnée, c'est l'oubli de mon nom, dans une délibération du conseil municipal de la commune que j'habite,

titres à la reconnaissance de la patrie. délibération qui avait pour but de perpétuer le souvenir de ceux qui avaient des

problème qui doit avoir pour résultat le chauffage et l'éclairage du monde entier. Providence m'accordera encore la satisfaction d'avoir contribué à résoudre ce grand tation et qui me compte parmi ses premiers actionnaires. J'ai la confiance que la verte de l'inventeur Gillard, ainsi que de la société qui s'est formée pour son exploitée de venir en aide à la science par mes capitaux ; je veux parler de la belle découl'industrie de mon pays, je n'ai pas été moins dévoué lorsque l'occasion s'est présen-Si je puis donner des preuves de mes sacrifices de toute nature pour être utile à

comme ayant le moral attaqué, et on s'efforce de vous faire passer pour tel! cherchez-vous à faire entrer vos concitoyens dans la voie des améliorations, on vous soumis! Toutes les douceurs de la vie leur sont interdites : repos, crédit, fortune, dédaigne, on va jusqu'à qualifier votre dévouement d'intrigue, on vous regarde bonheur intérieur des familles. Faites-vous des efforts inouis pour vous rendre utile; ce qu'il m'a été permis de faire, la machine la plus simple et la moins coûteuse pour cette promesse dans la circonstance qui va se présenter. J'ai dit en outre que je chures. J'ai annoncé qu'après avoir su laver les laines, je trouverais le moyen de de la part des envieux et des impuissants. Car à quelles épreuves ne sont-ils pas plet, serait déjà achevée si, en France, les inventeurs n'avaient pas tant à souffrir battre ses blés. La construction de cette machine, dont le plan est des à présent comprocurerais à l'agriculture, aidé de mon constructeur, qui a bien sa part dans tout les faire passer à l'étranger toutes travaillées, et je ne doute pas de la réalisation de Il me reste encore à remplir deux promesses que j'ai faites dans mes diverses bro-

voirs voudront bien s'occuper de donner plus de sécurité à nos malheureux invenont le bonheur de ne rien inventer? teurs. N'est-il pas juste de leur accorder la protection qu'on ne refuse pas à ceux qui l'industrie de toutes les nations; et s'il en est ainsi, espérons encore que les pou-Espérons que le génie français prendra sa bonne part dans la grande lutte de

l'énergie dont la Providence m'a doué, la force d'une bonne conscience et une persécution ont été poussés au suprême degré, et il m'a fallu, pour résister, toute A mon égard, Messieurs, comme à l'égard de tant d'autres, l'injustice et la

l'étranger, dans le paradis des inventeurs. avec impatience le moment où il me sera donné d'aller parler progrès avec Aussi, je ne puis vous exprimer combien mon cœur, tant de fois brisé, attend

Dans l'espoir, Messieurs, d'obtenir votre bon concours,

Recevez l'assurance de la haute considération avec laquelle j'ai l'honneur d'être votre tout dévoué serviteur,

DESPLANQUES JEUNE

Lizy, le 10 février 1851.

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# Système EINFER, mécanicien,

A Paris, rue de Malte, 58 (ancien 32), pres le boulevart du Tempte.

Vingt années de persévérance à des expériences nombreuses m'ont amené à des perfectionnements incontestables dans la fabrication des machines soufflantes (dite soufflets de forge), et forges portatives à double ou simple vent; le dernier système est encore plus remarquable par sa simplicité et solidité incon-testable, comme aussi à l'élégance de sa forme; sa construction est plus simple que celle des anciens soufflets: il est à piston, sans frottement; les cuirs sont d'une dimension moitié moins grande que pour les anciens soufflets; il est enfermé dans deux cylindres en tôle, placés à côté l'un de l'autre, assemblés dans des rainures par haut et bas dans des plateaux en bois ou en métal, et fixés au moyen de 7 boulons d'assemblage à vis à écrous : tel est l'ensemble de la construction. Dix minutes suffiseaut pour démonter ce soufflet, soit pour le nettoyer ou réparer les cuirs, s'il était nécessaire. Ce soufflet est à double vent; on obtient le même effet qu'avec un ventilateur et on pout foncer le vent à volonté; il est disposé de manière à être mis à simple vent par un moyen très-simple. Ce soufflet occupe moitié moins de place qu'un soufflet ancien système des meilleures fabriques, et chauffe un quart plus vite. Ce soufflet a l'avantage de pouvoir au moyen d'une tige que l'on lève, et en décrochant le poids pour le remplacer par un de 4 à 5 kilog seulement. Ce soufflet devient si doux à manœuvrer, qu'un enfant de 10 à 12 ans peut le faire manœuvrer du matin au soir sans être fatigué. Exemple, un soufflet de 0 50 c. de diamètre occupe une place de 0 55 c. de large, sur l 20 c. de long, hauteur, 0 50 c. Ce soufflet, remplace un soufflet ancien système de l'mètre servir à forger des pièces de 0"20 c. carré, étant à double vent, et 0"10 e. en le mettant à simple vent, de large sur 1"80 c. de long, et 1"50 c. de haut.

Ces soufilets et forges portatives à double et à simple vent sont adoptés par les Ingénieurs des chemins de fer pour les ateliers, les Mécaniciens Serruriers, Maréchaux, Taillandiers, Carrossiers, Fondeurs,

Monteurs en cuivre, Orfèvres, Bijoutiens, etc.

Les forges volantes sont aussi adoptées par l'Université, pour les essais de Métallurgie les plus réfrac-taires, comme aussi les tables d'émailleurs pour le soufflage du verre ainsi que pour les laboratoires de chimie du Conservatoire, etc., etc.,

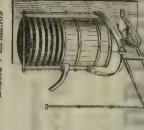
Ces objets admisa l'Exposition de Londres, ont été honorés de deux médailles aux Expositions autionales

Dans les objets exposés, on remarquera un petit modèle de soufflet avec deux cylindres en verre ; afin de démontrer la solidité et simplicité du système; il est monté avec la nouvelle branloire, laquelle peut tourner dans toutes les directions; malgré sa supériorité incontestable et en raison de sa simplicité, le prix n'est pas plus élevé que les soufflets ancien système, et la moindra garantie est de deux ans.

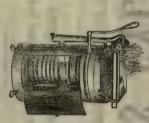
Nouvelles soupapes de sûreté en métal contre l'explosion; pour tous les soufflets en général, cette et la suie de monter dans le soufflet, lequel dessèche les cuirs, ce qui leur est très-nuisible pour la durée; toutes les soupapes de mes soufflets et forges sont en métal garmes en peam et repesent sur des parties soupape se monte sur les fuyaux de conduits d'air, cette soupape a encore l'avantage d'empècher le gaz saillantes en forme de gobelets également en métal et tournés de manière que le poussier ne peut jamais les empêcher de fermer.

Fabrique de ventilateurs en tout genre et avec vis sans fin, a rotation verticalle, appliqués aux forges portatives: la manivelle est montée sur un plateau tournant sur la partie supérféure du véntilateur de manière à pouvoir prendre toutes les directions nécessaires pour la facilité de la mana uvre.

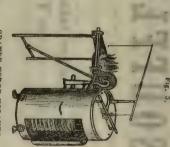
Tous mes articles, en général, sont brevetés et portent mon estampille pour éviter toute surprise aux



SOUFFLET A PISTON sans frottement, aree ou sans boite, a double ou simple vent.

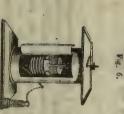


PETITE FORGE VOLANTE à double ou simple vent.



GRANDE FORGE VOLANTE, foyer mobile à simple vent.

Fig. '3 bis.



LAMPE D'ÉMAILLEUR.



FORGES VOLANTES

Ave on same boiles.

La manivelle est placée sur un plateau tournant, afin de prendre toutes les directions.



double vent à piston, sans froitement, soufflets de forze du même système.

Soufficts	
de	
Forge.	
	-

0 m. 25 cent. 30 35 40 45 50 55	diamètre.
40 fr. » c. 50 » 65 » 100 » 120 »	Soufflets de Forge.  SIMPLE VEIT  SIMPLE VEIT  SOUFFLE VEIT
50 fr. » c. 65 % 80 % 100 % 140 % 140 %	de Forge.  SIMPLE VENT.
	DOUBLE VENT
avec son plateau en hois,  15 fr. • c.  20	DE SOUPPLETS de pose et de mangaure

## Forges volantes.

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2000 2000	99	Diamètre. m. 25 30
	ven	Diamètre. 0 m. 25 c.
Forges à foyer rapporté.  0 m. 35 c. simple vent,	Forge ventilateur de 110 à 160 fr.	
Fig. 3. foyer rapple vent	Fig	Simple vent. 110 fr. 130
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160 fr.	160	110
*	7	40 60
•		Double vent 140 fr. 160

Forge volante à piston sans frottement. 0 m. 35 c. double vent, 250 fr.

Ventilateurs pour forges et fonderies, de 60 à 300 fr. et au-dessus.

Table d'émailleur de 50 à 100 fr. et au-dessus,

OOL

## PATENT



Cumming of the Commission of t

MACHINES.

## PLANING, MOULDING, MORTISING, TENONING, GROOVING, SAWING, AND BORING,

JOINERS, BUILDERS, COACH MAKERS, RAILROAD CARRIAGE AND WAGGON BUILDERS, CABINET MANUFAC-

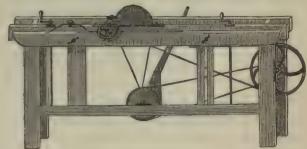
descriptions of work required in the above trades in a superior manner.

USED BY

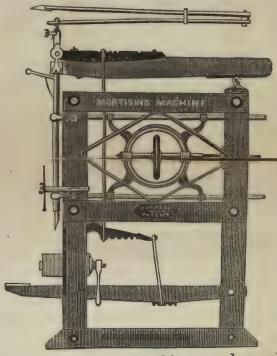
TURERS, PIANO-FORTE MAKERS, &c.

The principal Institutions for the Encouragement of Arts have awarded Seventeen Premiums to these Machines; they have been found in every respect perfect in their operations on either Hard or Soft Wood, and will perform all the ordinary

#### MOULDING MACHINE.



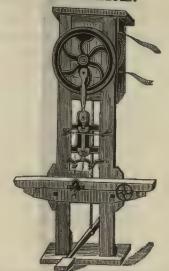
The advantages which this Machine possesses over manual labour will be seen by the fact that it will cut any description of Joiner's Mouldings in one operation, with great rapidity. and in such an accurate manner as not to require the use of any other tool, and is equally useful in Sash Sticking either in hard or soft wood: its construction is simple, and is easily kept in order.



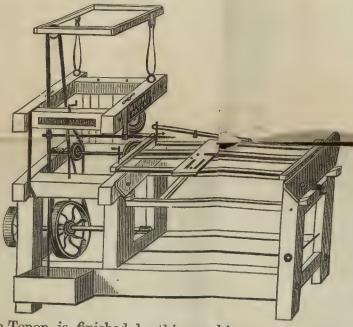
The above Foot Mortising Machine can be used with any size of chisel, from an eighth of an inch up to two inches it will set out and Mortise Naves for Wheels. Pins and Dowels are also made by it in a quick and perfect manner. One machine will perform the work of eight men.

### POWER MORTISING MACHINE.

This Machine is so simple in its adjustment and operation, that it may be worked by apprentices, and does not require the trouble of boring for the mortise: it is selfacting in its half rotary reverse motion to change the face of the chisel: its work is performed with a rapidity and precision that cannot fail to recommend it.



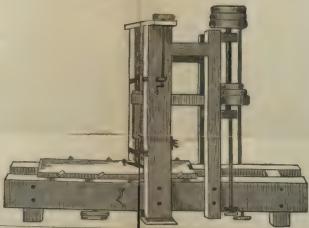
### TENONING MACHINE.



The Tenon is finished by this machine in one operation, without the loss of time or trouble of guaging and setting out the work, in a more true and perfect style than could possibly be executed by hand; it will also execute Rebating, Sash Scribing, and Boring, in any kind of wood, and will do as much work as ten men.

#### PLANING MACHINE.

This Machine is used for squaring up stuff of all kinds for Joiner's work, Mill work, Rail-road Waggons, Carriages, Cars, and Bedsteads; it also planes Planks, Boards, Coach and Car Pannels, &c. They can be furnished to plane from four to forty feet in length, eight to thirty-six inches wide,



and from one quarter to eighteen inches thick. The working of this machine is so perfect that it cannot possibly fail in producing an exact square and true The large amount of surface. work that can be accomplished by it, with the attention of one man, renders the machine exceedingly valuable.

### SHAPING MACHINE.

This machine will plane any kind of Joiner's sweeps and cir cular work, both on the concave and convex sides; it occupie very little space, and is easily worked and kept in order.

### BORING MACHINE FOR CARPENTER'S WORK

This is a very useful and portable machine for all kinds Carpenter's work or large framing, it will bore any size hole up to 3 inches and 8 inches deep: one man can do a much boring with it as three men with hand augers.

These Machines are now used by the British and F sch Governments, and by all the principal Contractors, Builders, and Machinists in the United Kingdom,

OCTOBER, 1851.

N.B.—The Machines may be seen in daily operation at the Works, I auton Street, Liverpool. 

### REBATING AND GROOVING MACHINE.

Any width of groove can be made by this machine up to 14 inch; it will also rebate, and match, any thickness of boarding up to 11 inch thick; it can be used with a small circular saw, and for cutting trenches across the wood.

### SWEEP SAWS.

These saws are fitted up in a new and complete way with a saw table, &c., they will cut any kind of Joiner's or Cabinet maker's moulds or circular work, at a very rapid rate, doing the work of six men.

### WILLIAM FURNESS,

20, LAWTON STREET, LIVERPOOL.



# W VENTILATING HAT,

BIRCHIN LANE, CORNHILL, LONDON.

These Hats are perfectly waterproof; the shape is not liable to injury from reat or rain; they are porous, and the light hats are pliant to the head. Being composed of cork and other materials which are non-conductors of neat, the head is kept cooler than by the ordinary hat. In case of injury, hey can be readily repaired by any hatter in the ordinary way.

Extract from the "MAGAZINE OF SCIENCE," 1st May, 1851.

"NEW VENTIATING HAT. — Messrs. Gaines, Sanders, and Nicol were one of the first manufacturers in this country who introduced the Velvet-Nap Hats at present worn; and they have now produced a most valuable and entirely new article, a specimen of which they exhibit at the World's Fair. This hat will rank high from the properties it passesses, being, first, extremely light, hardly any fabric ever constructed as a covering for the head equalling it in this respect. Secondly, that of perfect varifation, for, if the crown be breathed upon, the warm air may be sensibly felt inside. Thirdly, its

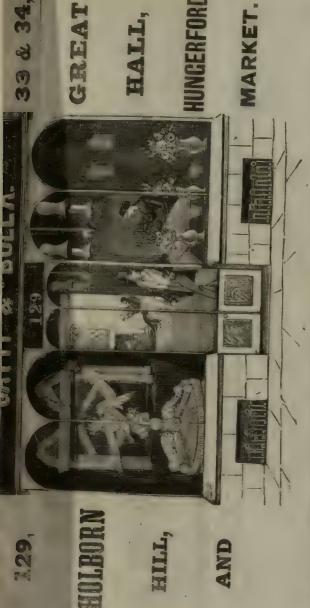
fabric being a non-conductor of heat, renders it invaluable for hot climates, and of great sanitary value during the summer heat of our own country. Fourthly, its plianey allowing it to adapt itself most readily to the form of the head, and not press tightly and injuriously on the Gerelead. Fifthly, its elasticity preventing its breaking, and by casual circumstances of wet and heat, becoming unshapely, stances of wet and heat, becoming unshapely, giving beauty of appearance and durability, of these grounds the firm enters, with confidence, the competition at the Palace of

Price, from 12s. 6d.

loosely on the shaft; he then reverses the mot fast pulley, thereby turning back or backing

numbers are being made dail





Respectfully informs the English Public that they have for years been extensively engaged in the manufacture of the purest French and Italian Chocolate, patronised by the Nobility of France and Italy, and also by the most eminent Physicians of the day.

They have just erected a powerful Engine at the above address, and the Chocolate is made in the presence of the public from the pure nut.

small packet taken as a trial will prove that the beautiful Aroma for which the French and

cupful of hot water or milk, then put the chocolate in, and dissolve it with the milk. Take, afterwards the pot to a smart fire, and keep it one minute, until the chocolate has come three or four times boiling to the brim, when it will be made; but remember to continue always milling while Italian Chocolates have so long been famed is to be found here.

Formaking a large and strong cup of Chocolate, take two of the eight pieces (ounces) which pose the half pound; and for a small cup, one piece. Cut it thin, pour in the pot the large or small pose the half pound; and for a small cup, one piece in and dissolve it with the milk. Take, afteron the fire, and particularly afterwards, on pouring into the cup, that it may produce that froth which is considered the greatest beauty of a good cup of chocolate, particularly when made with

water, which is the true way. CHOCOLATE POTS and MILLS so necessary for making it good, not being easily found in London, a certain number will be always kept at the Establishment, for the convenience of

\* All Orders for Chocolate received at the Exhibition are executed on the same day, and customers.

CHOCOLATE IN PACKETS. sent home free of expense.

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Chocolate, from One Chocolate Pastiles and a Great Variety of Sweetmeats in Shillings per Pound.

n ta hair na r the second of th and a same a same ...... avail to moral attacers of on softened de voits follo masser pour follo .

# By Wer Majesty's



# TO MERCHANTS, MANUFACTURERS, MACHINISTS, &c.

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# MESSRS. JOSEPH & WILLIAM HARRISON,

BANK FOUNDER, BELCKBURN,

Bre to announce that they have purchased from Messus. HORNBY & KENWORTHY, Brookhouse Mills, Blackburn, all their Right, Title, and Interest whatsoever, in and arising out of the Letters Patent granted unto them by Her present Mijssty, for England and Wales, and the Town of Berwick-upon-Tweed, "for certain Improvements in the Machinery or Apparatus for Sizing or otherwise Preparing Cotton, Wool, Flax, and other Warps for Wearing." Also in and arising ort of the Letters Patent granted unto them for the axid Invention for Ireland; and also in and arising out of the Letters Patent granted unto William Kenwonthy, for England and Wales, and the Town of Berwick-upon-Tweed, "for certain Improvements in Machinery or Apparatus called Beaming or Warping Machines." Such Right, Title, and Interest, and all Beneft, Proft, and Patent Right Fees, in and arising out of the said Letters Patent, to accrue to the said Messrs. JOSEPH and WILLIAM HARRISON, from the first day of Jannary, 1851.

The advantages of the above Machines have, of late, had considerable additions through very great Improvements, which Messrs. Harrison will be glad to show in operation on application, and to receive applications for renewal of, or

gents for, Licenses for making the Machines.

Messrs. J. & W. HARRISON also give notice that they have been appointed by Messrs. Hornby & Kenworihy their agents for the collection of their Patent Right Fees, arising from Letters Patent for England and Wales, and the Town of Berwick-upon-Tweed, and for Ireland, granted unto William Kenworihy and James Bulloven, of Blackburn, for Improvements in Looms.

They, therefore, respectfully solicit all persons, making or using the said Patented Inventions, to make an IMMEDIATE return of the number of Looms (to which such Inventions, or any part thereof, have been applied,) to them, or Messrs. Homeny and Kernworthy. as above.

Messrs. J. & W. HARRISON beg to observe that KENWORTHY and HULLOUGH'S Patent has been applied to nearly 100,000 Looms, and the importance of the Invention need not be commented upon. Parties neglecting to give an immediate and exercet return, will be hald responsible as intringing upon the right of the Patentesses.

# Messrs, Joseph & William Harrison's Terms for Warping Machines.

9-8 Machine, including Patent Right, £13 0 0 ... Creel, £3 0 0 Extra. 6-4 do. do. £3 10 0 Extra. Indicator, 30s. Extra .. Machines, for Exportation, £3 Extra.—Nett Cash.

# For Sizing or Dressing Machines.

£115.	£120.	£125.	
7-8 Machine, including Parent Right and Copper Roller £115.		COLUMN TO THE PARTY OF THE PART	I now count Discount off - How Downshoping 010 Date
Roller .	•	•	Par Dan
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Machine,	do.	do.	
200	8-8	6-4	

The above includes Brushes.—If without Brushes, a reduction in price of above will be made.

# Bullough's Kenworthy and

per Loom.	do.	a0.	Extra.
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0s.	200	, XX	200
Patent Right, for New and Old Looms	To the contract of the contrac	Re colling Motions to the Takang un	Payment, Nett Cash, when set to work.

Parties contracting for the Patent Right, and paying in advance, previous to being set to work, will be allowed the following

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Note.—Manufacturers are held responsible for the payment of the Patent Right, and are cautioned not to use these Improve ments without an immediate settlement with the Patentees, who are anxious to avoid unpleasant proceedings, and will consider further caution unnecessary.



# AND BULLOUGH'S PATENT POWER-LOOM, KENWORTHY

~ horalman 1737

and Co. s Brookhouse W. H. Hornby

## الما 10.62 L.C.C.

Bee most respectfully to call the attention of Manufacturers and Machinis's, to the improvements they have made in Looms, which have already been applied to nearly 100,000 Looms, with such success as enables them confidently to pronounce their inventions of the utmost importance, being indispensable to every Power-Loom Manufacturer desirous to produce Cloth upon a correct and undersiding principle.

They also beg to remark, that the perfecting of this invention has not only been very expensive, but has cost them many years of unwearied attention and indefatigable perseverance, and this being the third Patent granted to them for the same object, and they being the first to conceive, attempt, and ultimately work out the improved Loom into its present perfect state of practical utility,

## GIVE NOTICE, THEY DO HEREBY

that any person or persons making or using their inventions, either in whole or in part, directly or indirectly, not having the consent of the Patentees so to do, will be proceeded against forthwith.—As infringements have already been reported, KENWORTHY and BULLOUGH beg to caution all persons against infringing or being misled into a trespass upon the Patent Right, as it is their intention to maintain inviolable the privileges of the said Patent Right, to the utmost extent allowed by law.

The following is a brief recital of some of the leading advantages possessed by this Loom, viz:—
1st.—THE TAKING-UP MOTION, for effecting the coiling up of the cloth, is positive and perfectly uniform; it can be readily varied to suit any required number of picks; and these are obtained with the greatest possible regularity in "count," without being subject to the slightest variation through negligence or inattention of the weaver.

2nd.—The Taking-up Metion is much simpler, more durable, and not so liable to get out of order as the one in common use; it is disengaged the moment the weft thread breaks, or made to RE-COIL, and thereby the progress of the warp

is instantaneously stopped.

3rd.—The ordinary temples are dispensed with, and are substituted by a simple, self-acting application, by which the cloth is kept distended at one uniform breadth, and made entirely free from pin perforations or temple tears, and the selvages are made beautifully uniform and good.

4th.—The Loom will not go without weft, being thrown out of gear by the first absent pick. This arrangement greatly protects the sides of the warp from breakage, consequent upon a loom going without weft, and dispenses with much of the care and watchfulness upon the part of the weaver.

5th.—Looms on this principle weave better, and make very superior cloth to a common Loom; they are simple in construction and application—are attended with a saving of power—less wear and tear; they produce fully more work, and of much better quality than common Looms, and therefore cannot fail with fair arrangements, to work out advantages

which must ultimately be productive of great benefit both to the employer and employed.

6th.—These improvements can be applied, at a moderate cost, to all Looms now in use.

KENWORTHY and BULLOUGH have the pleasure of stating that their inventions have been highly complimented by many respectable houses in various parts of England and Scotland, who purchased the Patent Right immediately after seeing the Loom in operation, and for which they tender their best thanks.

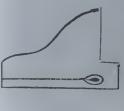
Orders for Looms received, and Licenses granted by, Messrs. W. H. HORNBY and Co., and the Agents to the tentees, Messrs. JOSEPH and WILLIAM HARRISON, Bank Foundry, Blackburn, who will feel pleasure in showing Improved Looms, and the Patent Warping and Dressing Machines at work.

# Figure 1. Directions for Fixing the Roller Box Temple.

With a proper level set the taking-in edge of the Temple Box at each end § of an inch lower than top of Breast Beam, while at the same time the delivery side of the box must be set level with the Breast Beam. Set the Slay just to clear the bottom of the Temple box, and at the same time the front edge just to clear the Reed;—screw all fast, and it will be rightly set. For thin cloth, the Temple may be set a little from the Reed, and the Roller raised a little out of the Box, which can be easily regulated as required. If these Temples are properly fitted up and fixed, as above directed, they are certain to act most admirably. Sample Temples and Levels furnished by W. H. HORNBY and Co., and JOSEPH HARRISON, Bank Foundry, Blackburn, on the shortest notice.

# Directions for Fixing Fillet Temples. Figure 2.

One Bracket with Fillet Roller to be set on each end of the Breast Beam, and fixed at such distance from each other as will take in the width of Cloth required: these for loose Reed Looms. If applied to fast Reed Looms, they must be fixed on Springs, so that if the stop rod goes over when the shuttle is in the shed, the Springs will yield without doing any injury to the Temple. Fig. 1.







So Majente la Meine d'Augleterre. In les Detters J'atentes de

## MACHINISTES. MANUFACTURIERS. AUX MARCHANDS,

# MESSIFURS JOSEPH & WILLIAM HARRISON, BANK FOUNDRY, BLACKBURN,

Our l'honneur de faire savoir qu'ils ont achete de Messienrs Honneux & Kennorides prasa Majoste, pour l'Angleterre, leu Droit, fitre et Intérêt quelconque, conclaine et compris dans les Lettres Patentes, accordées pra sa Majoste, pour l'Angleterre, le Pays de Galles, a l'ausge des Machines pour apprêter le Coton, la Laine, le Charver et d'autres Chaines de tissu; aussi touchant et compris dans les Lettres Patentes, que relation le leur ont été accordées pour l'invention sus dite, pour l'Irlande, et aussi touchant et compris dans les Series Patentes, accordées a Willand KENNORITY pour l'Angleterre, le Pays de Galles et la Ville de Bervick-sur-le-l'aveul, "pour de certains perfection nements à lusage des Machines pour rouler on ouvir le fil: et Droit, ce Titre, et cel Interêt et tout le Bérdée, Profit et Gans et môtie le la Patente touchant et compris dans les sus-cities Lettres Patentes, doivent revenir aux sus-dits Messieurs JoSSE-PH et WILLIAM HARRISON, à partir du premièrement des augmentations considérables à cause de la perfection a la patelle en les a protrées, et hossieurs JoSSE-PH et WILLIAM HARRISON, à partir du premièrement des augmentations considérables à cause de la perfection aux personnes qui se précenteront pour les voir tavailler; ils seront aux bessieurs l'aux de la Marris, les la Messieurs JoSNE de la prefection de la perfection de la Ville de Bervières de la Mille de Bervière les la la perfection de la la perfection de la Ville de Bervière les la la perfection de la la perfection de la perfection de la la perfection de la perfection de la perfection de la perfection de la la perfection de la perfection de la

Blackburn, le 6 de Février, 1851.

# Prix des Machines pour Ourdir, de Messieurs J. & W. Harrison.

0 ..Creel,\* £3 0 0 Extra. 0 .. do .. £3 10 0 Extra. £3.—Argent comptant sans décompte. Machine de 9-8 y compris le droit de Patente...£13 0 Ditto 6-4 ditto Ditto 6-4 ditto ditto ...£18 10 Indicateur, 30 shillings Extra...Machines, pour l'Etranger,

	£115.	£120.	£125.
***	Machine 7-8 v compris le Droit de Patente et Rouleau en cuivre		
morning boar arbitration	t Rouleau er	ditto	ditto
TYTOPTAT	e Patente e	ditto	ditto
	v compris le Droit d	ditto	
	Machine 7-8	Ditto 9-8	Ditto 6-4

On accorde 14 pour cent, de décompte—Pour l'Étranger, £10 Extra.

Dans les articles ci-dessus, les brosses y sont comprises. Sans brosses, on fait une réduction dans le prix. Sans brosses,

# Prix de Messieurs Kenworthy & Bullough

10s. 6d. par Métier.	ditto.	ditto.	1s. 0d. Extra.	apte.
6d.	6d.	2s. 6d.	Od.	econ
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Droit de Pateute, pour Métiers neufs et vieux	Sans Temple	Pour le Temple seulement	Reculements aux Enlévements	Le pavement se fait de suite, quand le Métier commence à Travailler. Nul décompte.
oit de Patente, p	Ditto	Ditto	Reculements at	Le pavement
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gravailler la Machine personnes qui contractent pour le Droit de

	71 pour cent.			15 ditto.		
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	Métiers de Tisserand	ditt	ditt	ditto	ditt	ditt
						T,000
upte suivant.		200	300	700	000	1,000
an decompte s	Pour	7.5	66	39	33	33

N.B.—Les Manufacturiers sont responsables pour le payement du Droit de Patente; on les prévient aussi de ne pas se servir de ces perfectionnements, sans avoir fait marché avec les Impetrants; ces Messieurs désirent éviter les procès autant que possible et ils ne pensent pas qu'il soit nécessaire de donner plus de publicité à cet avis.

\* Un cadre de bois appelé "Creel."



Met.ers de Tisserand et Sollicitent l'attention des Manufacturers et des Machinistes aux avancements qu'els ont faus dans les qu'en a appliques à près de 100,000 Metrers avec un tel succes, qu'ils peuvent avec la plus gran

qu'on a appliques, à près de 100,000 Netiers avec un tel succes, qu'ils percent avec la plus grande confiance citer leurs presentions comme de la derritement en present en de la derritement in produce, et content de celle invention non scalinent leur a cie très couteux, maissaussi lour a occasionne de perfectionnement de celle invention non scalinent leur a cie très couteux, maissaussi lour a occasionnement de celle invention non scalinent leur a cie très couteux, maissaussi lour a occasionne de perfectionnement de celle invention non scalinent leur a cie très couteux, maissaussi lour a occasionne de perfectionnement qui avaient essaye, et comme cest la moisseme fois qu'ils ont ditenu une l'atente pour ce même. Neties, étant les permiess luventeurs qui avaient essaye, et coffo fait travailler ce Metier perfectionne de l'isserand dans sa présente condition de perfection et d'utilité pratique, que l'arbite pur ces présentes,

loosely on the shaft; he then reverses the mot

que, quivonque fibrique, ou se sert de leurs inventions, ou entièrement, ou en partie; directement ou indirectement sans obtenir de pennission des l'infétants seur paravit selon la rigueur de la loi.—Comme on a déglé fait courir les bruits que des violations ont de commisses, Messieurs Karworthar & Bulloutha suissent cette occasion pour precautionner contre ces violations, toutes les personnes qui pourmaient se laisser seduire par la transgression du Droit de la deute, parcequ'ils sont bien déterminés de maintenir, inviolables, les priviléges du Droit de la dire Patente, selon toutes les rigueurs de la loi, sont bien déterminés de maintenir, sit au suit est une courte merution de quelques uns des avantages essentiels, qui appartiement à ce Métier de l'isserand.—
10—Le Mouvement d'enlever, pour obtenir le Roulement de di dupe est certain et parfaitement uniformer on peut le vaire aisèment afin qu'il puisse couvenir à un nombre quelconque de Martilines, dont on pourrait avoir besoin; ces dernières s'obtiennent gaveo la plus grande régularité possible "en comple" sans être assujetties à la moindre variation, par la négligence, ou

Les Mouvement d'enlever est beaucoup plus simple, plus darable, et n'est pas exposé à se déranger, comme celui dont on se sen ordinairement; il se trouve en liberté au moment que le fil du tissa se rompt on qu'on fasse reculer; par-là le progrès de la claine est de suite arrêté.

Les Temples ordinaires deviennent inutiles, et sont remplacés par une application simple, qui agit d'elle-même, et par laquelle le drap se tient tendu, d'une largeur uniforme et entièrement sans trous occasionnes par des épingles ou des déchirements du Temple: les lisières sont belles, uniformes et bonnes.

Le Médica de Tisseannd sans le fil du tissu n'ira pas, parcequ'il se trouve dérangé par l'absence de la première Martiline.—Cet arrangement empêche benneonp les lisières de la Chaine de se rompre, ce qui arriverait, si un Mética allait sans fil de tissu, et le Bisseannd d'après ce procédé n'n pas besoin de faire en ne si grande attention.

Les Médies de Tisseand, d'après ce principe, travailleut miseux, et produisent un drap bien supérieur à celui d'un Médier ordinaire. Ils sont simples dans leur construction et aussi dans leur application, ils n'out pas besoin d'un si grand des Médiers ordinaires; c'est pour cette raison qu' avec de bons arrangements, ils sont suis e realiser des résultats fort par avent pas reconners.

SABOUR OUR OF LIFE SIZING

69—Pour une somme modique, on peut adapter ces perfectionnements aux Métiers de Tisserand en usage à present.
Messieurs KENWORTHY & BULLOUGH on Phonneur de faire savoir que leurs inventions ont été hautement estimées et approuvées de plusieurs Manufacturiers de première classe, dans diverses parties de l'Angleteure et de l' Ecosse, qui après avoir vu la Métier de Tisserand en pleine opération, en ont acheté le Droit de Patente, pour lequel ils offient leurs remerciments bien sincères.

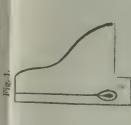
Messions W. H. HORNBY & Co., reçoivent les commandes pour les Métiers de Tisseraud, et accordent des priviléges; et Messions JOSEPH & WILLIAM HARRISON, Agents des Impérants, Bank Foundry, Blackburn, se feront un grand plasir de montrer les perfectionnements des Métiers de Tisserand en activité et les Machines Patentes pour Appréter et ourdir le fil.

Fig. 1. Manières de fixer le Temple de la Boîte au Rouleau.

Avec un Niveau il faut fixer le bord qui regoit de la Boite du Temple à chaque bout § d'un pouce plus bas que le laut de la Boitenière, en même temps, le côté du déroulement de la Boite doit être ajusté avec la Poirraière. Mettez le Peigne pour debransser le fond de la Boite du Temple e, e aussi la lisière de devant, pour que le Roseau soit libre ; alors fermez à vis, et tout sen comme il faut. Pour le drap clair, le Temple peut étre ajuste un peu élegigre du Roseau, e ele Rohelan un peu élevé hors de la Boite, ce qui peut se faire aisement si l'occasion lexige. Si ces l'emples sout bien préparés et faxes justement, d'après les instructions ci-desus, ils ront admirablement. Messieurs W. H. HORNBY & Co. et JOSEPH HARRISON, Bank Foundry, Blackburn, enveront des Modèles de Temple et de Niveau, aussitét qu' on voudre bien en faure la demande.

Manières de fixer les Temples à Filet. Fig. 2.

Il faut mettre un Tasseau avec un Rouleau à filet à chaque bout de la Poirrinière et les fixer à une telle distance l'un de l'autre, pouvoir prendre la largeur du drap, dont on a besoin; ces instructions servent pour les Médiers de Tisseana non tendus au Roseau, il faut les fixer sur des Ressorts, parceque si la tringle qui sert pour aurêtet, passe dessus quand la Navette est dans l' Appentis, les Ressorts alors donneront sans occasionner de domnage au Temple.





ade pouce



## SIZING OR DRESSING MACHINES,

AND

## WARPING OR BEAMING MACHINES.

Bo Der Majesty's



Royal Letters Patent.

The Machine exhibited by Messrs. Hornby and Kenworthy, of Blackburn, is a model of a Sizing Machine, which was paterized by them, but the Letters Patent are now the property of Messrs. J. & W. Harrison, of Blackburn; this Machine is for the purpose of Sizing, Dressing, or preparing the warp threads, by causing flour paste to be combined and retained with the fibres of the threads, so that they are made more tough and smooth for weaving.

This Machine works in connection with the Warping or Beaming Machine, a model of which is exhibited by Mr. Wm. Kenworthy, of Blackburn, which was patented; but these Letters Patent, also, are the property of the Messrs. Harrison, before named. In the process of the cotton manufacture, before the yarn comes to the Warping Machine, it is would from the cop on to bobbins of about four inches long and about three inches diameter; these bobbins of yarn we then taken to the Warping Machine, for the purpose of the threads being laid equally parallel to each other, to make them into a beamed warp, and to facilitate the arrangement of them after being sized, and placed in the Loom, a cumbrous machine, termed the Warping Mill, was used instead of this improved Machine of Mr. Kenworthy's, which Warping Mill was worked by hand; after the yarn had been made into a balled warp, it was then taken to the old kind of Sizing Machine, which soaked the yarn into the warm size, then dried it, then squeezed it between your rollers, and next it was reballed. The warp was then taken from this machine to a machine for winding it on a roller beam, after which it was taken to the looming frame, and next to the Loom to be woven into cloth; but now by the connection of Mr. Kenworthy's Warping Machine with the Sizing Machine of Messrs. Hornby and Kenworthy, the process is made much shorter and more simple, and is withal systematic and mechanical.

It will be seen, on reference to the Warping Machine itself in the Exhibition, that the Bobbins containing yarn are placed in a wooden frame called a "Creel," so that they will revolve; the threads are then passed through a "wraithe" on to a roller beam. The "wraithe" is for the purpose of keeping the threads separate and uniformly in the order in which they are intended to be wound off (after having passed through the size) on to the weaver's yarn beam. In this machine is a beautiful adaptation of mechanism, by which the yarn may be backed off the beam, if by chance any broken thread has escaped the eye of the operative and got on the beam; this motion consists of a series of small cylindrical rods so arranged that the threads of yarn pass under them, and supposing none of the threads and to break during the process, the beam would get filled without any necessity for calling this invention into action; but it so happens that breakages often do occur, and as the machine works at a rather quick speed, those dissevered threads get on to the beam before the operative has sufficient time to stop the machine. The machine is provided with two sets of driving pullies, one pair at each end of the driving shaft: that pair which drive the backing off motion, work one half the speed the others do: the leathern straps or bands which connect these pullies with the main shaft of the factory are so arranged, by the one (that which drives the backing off motion) being crossed and the other being open, the motion of the machine can be reversed whenever the threads are broken; the operative therefore effects the stoppage of the machine by simply passing the open strap off the fast pulley to one revolving loosely on the shaft; he then reverses the motion by passing the crossed strap off a loosely revolving pulley on to the fact palley, thereby turning back or backing off the threads from the beam: the serie of cylindrical rollers then

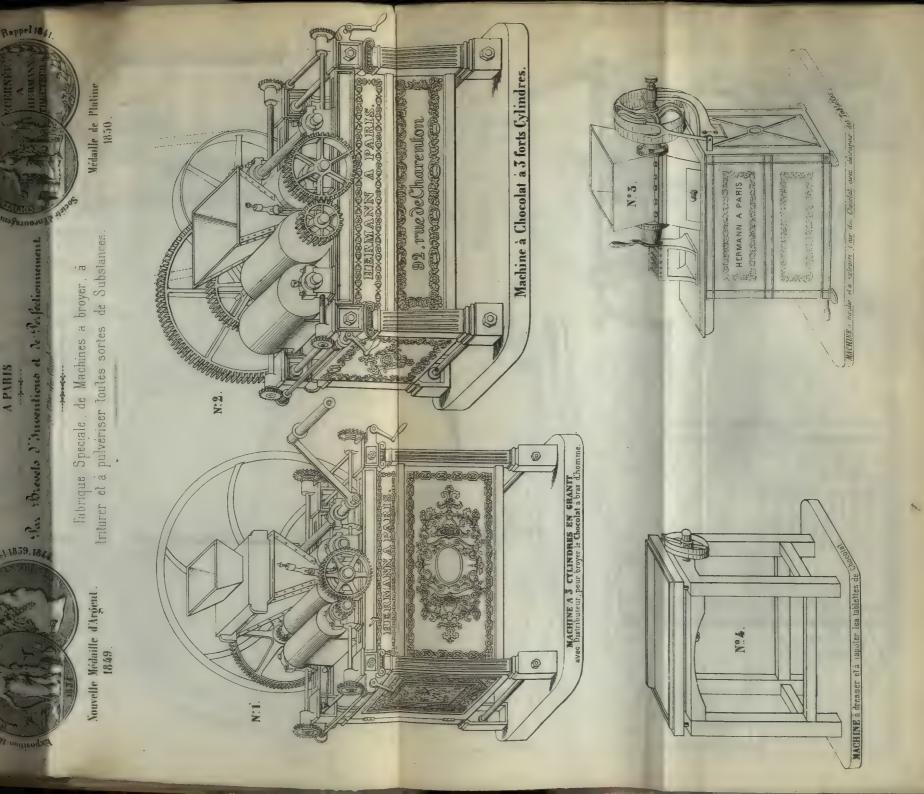
perform their office by moving down slots made in the framing of the machine, in their progress bearing down them the threads backed off the beam, until the severed thread is discovered and united, when the operative sets the machine as before the breakage took place, and the cylindrical rollers return to their former position. After beam is filled by this machine, it is placed along with five others in the improved Sizing Machine. These beams placed in bearings so that they will revolve at the left end of the machine, and weights are placed upon their pives that they are kept in their places, the six threads of yarn are then passed through an ordinary comb bar or "Wrait and thus divided equally until passed through the healds, which in this machine are situated at the left end, for purpose of effecting the cross shed, and thereby taking the "lease" previously to the yarns being submitted to sizing process. The "lease" now being taken, and the cross band or threads being introduced for the purpos "looming," or drawing in of the weaver's beam, the threads of yarn are passed over a "wraithe" or comb formed by a row of teeth or pins of intervening spaces, for the purpose of laying the threads in parallel breadths: by side, and forming each division or band of threads (of any required number) into separate and distinct tage sheets (of any desired width,) each thread being laid parallel side by side, and thus in lateral contact, the "wrait or comb bar being allowed to vibrate or oscillate freely as the threads proceed. The continuous threads now be thus made or separated into breadths or bands, are now passed over a conducting roller and immersed into the tree containing the sizing material, which is here kept in a heated state by steam passing through a pipe into the tronand thus boiled into the warp threads as they pass through it and under the adjustable tension roller, which can adjusted to any required degree of tension at pleasure, or can be raised up, when necessary, entirely out of the tro by means of a winch, worm and rack, with which the pinions of the rollers are connected. The threads are passed forward through a pair of squeezing rollers, and again similarly immersed in the trough containing the size finish the varn; from thence they are passed around the drying cylinder, also heated by steam, and now assume form of tapes or bands, the sizing material by its slightly adhesive properties causing the threads thus to all slightly together, and thus proceed in a tape-like form, being of course much stronger, more regular and even, and likely to be broken or disarranged than in the old mode of sizing. A circular revolving brush is placed over threads as they proceed over the drying cylinders, for the purpose of dressing, or laying the fibres and making tages or bands more compact and even. They now proceed in a sized, dried and finished state, being conducts two rollers through a similar "wraithe" or comb bar, but of a much finer pitch; and by passing through white bands of threads are passed edgewise, and again similarly divided by the oscillating or vibratory action of the bar, and laid over the tension roller at the right hand end of the machine, in a proper state to be received and we upon the warp beam, ready for the operation of drawing in, after which operation it is taken to the loom and we

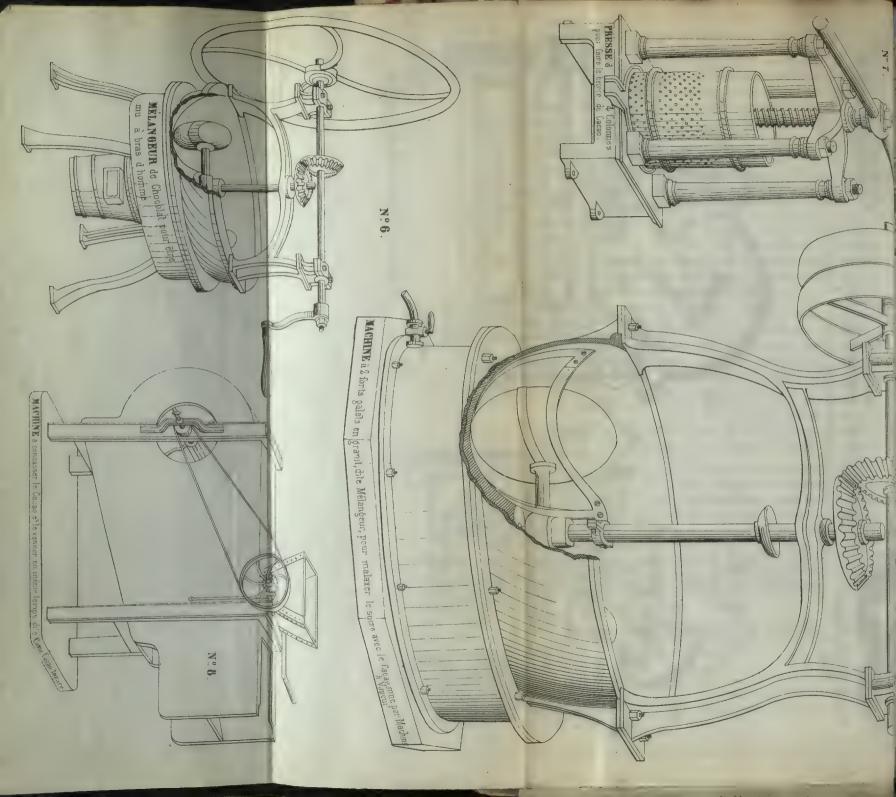
An improved self-acting marking apparatus is connected with this machine; upon the end of one of the revite guide rollers of the machine is a small worm working into a small wheel on the end of a shaft, at the reverse a which is a small mitre wheel driving a corresponding wheel upon another shaft, which carries at its other revolving marker, which marker alternately dips into a box of colour, and marking the warp threads therewith revolves, it thus marks out any desired length of warp for the pieces of cloth intended to be woven, and allowing warp beams to contain accurate lengths without waste in the looming. The combination, therefore, of the division the threads into bands, the arrangement of the "healds" for obtaining the cross shed in taking the "lease" previous dressing or sizing, the new forms of "wraithes" or comb bars, and the self-acting marker with the improved constitute of the mechanism employed, constitutes an important improvement, and is of great benefit in the preparation of the mechanism employed, constitutes an important improvement, and is of great benefit in the preparation of the mechanism employed, constitutes an important improvement, and is of great benefit in the preparation of the mechanism employed, constitutes an important improvement, and is of great benefit in the preparation of the mechanism employed in the preparatio

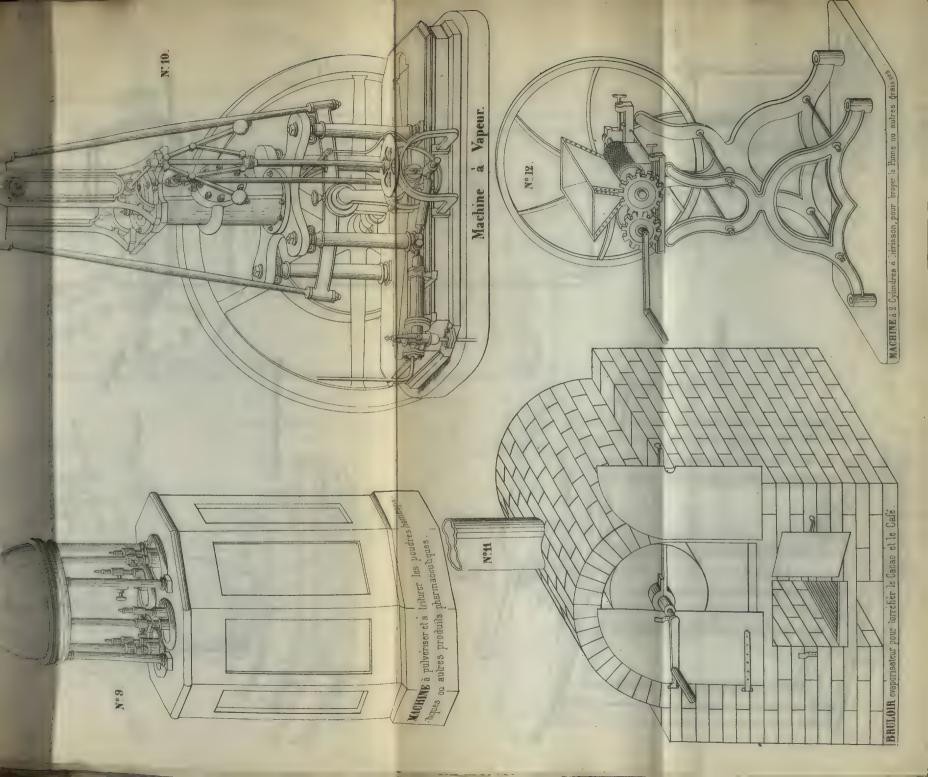
Messrs. Harrison have several improvements upon these machines since those exhibited by Messrs. Howard and Kenworthy were made for exhibition, which they will be glad to point out at their Works, Bank Foundation, Lancashire.

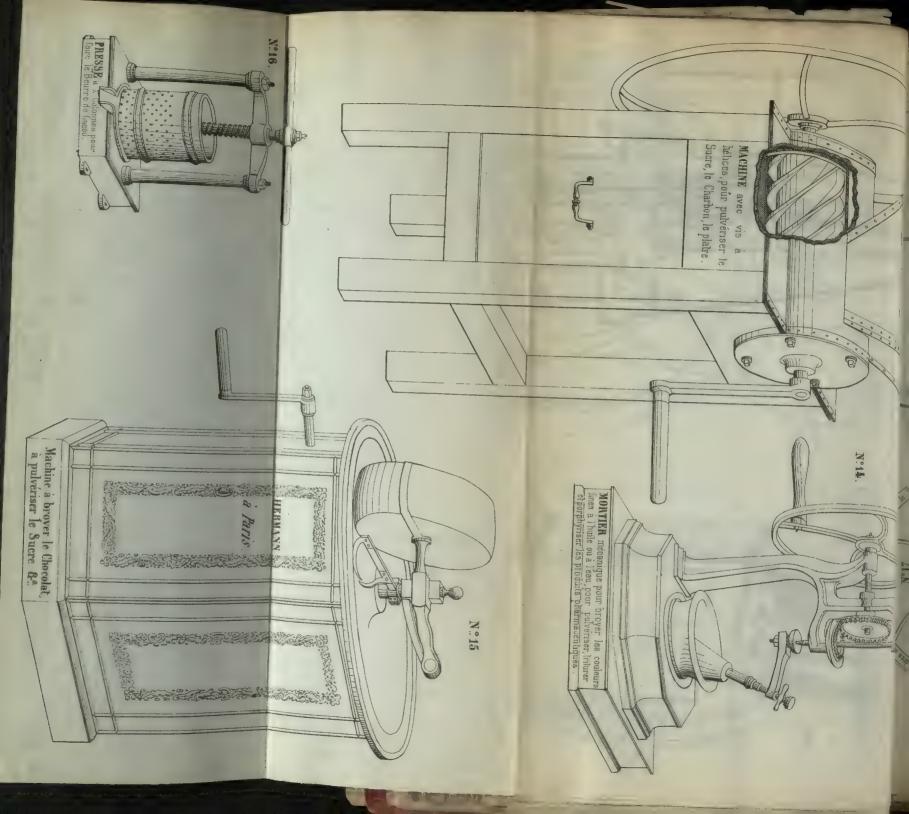
The Sizing Machine is equally well adapted for sizing Flax as Cotton yarn, it stands in about the same spatche old dressing frame, takes less power, does nearly six times the quantity of work, and is calculated for combine mule or throstle yarn; and with the assistance of a good workman will run off about 1,200 cuts perform of 5½ days) of 9-8ths wide, 66 reed, 25 yards long.

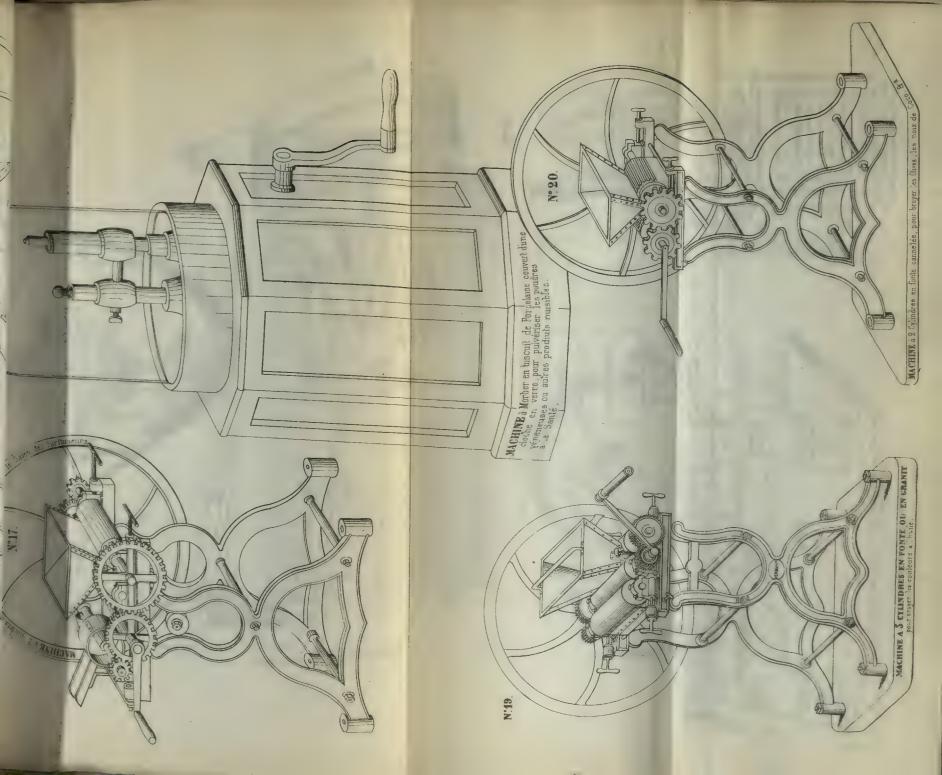
About 800 of the Sizing Machines and 2,000 Warping Machines have already been made, and additions to numbers are being made daily.

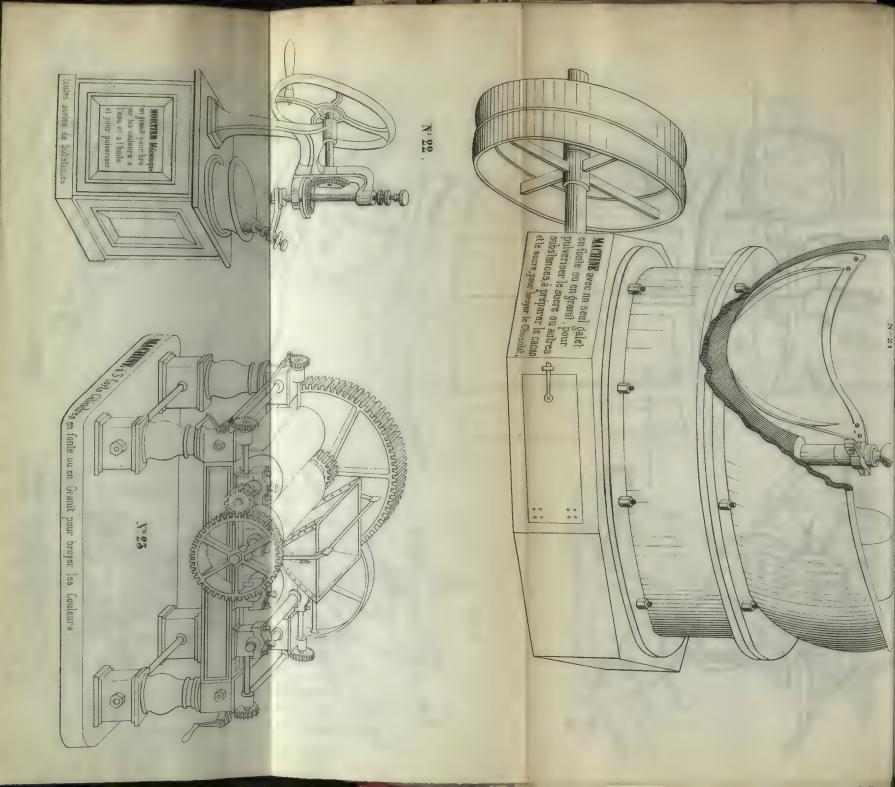
















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exposes en 1849.

(Tome II.)

# S. H. Machines à Chocolai-en à broyer!

Mr George Hermann, Sue de Charenton, 92, à Parix.

A. H. Mann a expose in gran) nombrede machina, touter I une execution remarquable.

Set madrines, à trois cylindres, destincés à broyer le bocolar enles conleurs, dons commes depuis bongtemps.

A. Hermann a appell l'attention du Tury sur troix machiner nouvellemen inventier, pas lui, es qui, malgre leur dates recente our deja recula sanction del experience.

a comenter en som detachees par des ractettes varan le pourtour; deux vationa, en forme d'helice, mis en mouvemens, par le même arbre à leus cricoufirence estournam verticalemens dans une auge circulaire, aussi engranis, es convexe à son centre les matieres qui s'attachens qui condun les meules, retournent sans cesse, en sens un erse, les patés soumiser à l'action des meuler. Ce appareil, deje trèc repandu dans les fabriques de chocolar, a cendu un double dervice à cette mourise, tann à cause de la prefection du travail qu'il produin, que pance-C'ex d'abord un appareil auquel il donne le nom de eMelangeror. Ca appareil de compose de deux meules -en grann, arrondies on il remplace definitivemente les mortier a pilone, vi in commodes dans les Villes par leur bruin.

goniespadbiques; anoù Mo. Hermann en a-t-il construir une à une sent auga disposse foraingénieusement pour metre, ceux qui enfonçusage, à l'abri des inconvenient attachée au travail des dubrances véneneuses. bisain de porcelaine en decrivam, en même temo, pur elle meme, un mouvement de rotation, vous la pression elastique d'un ressou. à boudins. Cette machine Jestinie primeipalemen a la partirination des pour ses plannacentiques, en des implayents and a restion des meinaments quer, dons chacume convicte dans une molette toumant verticalem une automo dela circonfèrence intérieure d'une auge circulaire en Fient enouite une autre machine d'une éligance remarquable, en renteman entre des quatre colonnes quatremadrines identi-

For ground are, Jans 30 revolution, engendre un Erne renverse. Cette dingle exingéniense combinaison a jour resultar Defaire Jubir ) ana matière, placeed dans le mortier une dévie de frottemen croise en tour deux, qui les amenem, promptement a une finesse Jond I'm morker en porcelaine onen grauns, er une, à dou cootremité dupenieure. I'un momemen circulaire excentique Je telle dorte que Phile parain avoir resolu le problème longtans obserbse du moyen mécanique dubritue à la mulette mue par la main del fromme pour la confection des contents impalsables. Elle de compire d'un pilon bémispérème à deposité inférieure, parfaitement ajuste deus le La trivieme, entro, i emarquable par son originalite, dertine an broyage despondres fine, mais primeipalemen. Des contens à l'encon à

Le Jung a accordé à 910°. Hermann me nouvelle médaille d'angun.

Bonne 11. - Quatrieme Section.

M. Mapen. Dans son Rappour, snot l'extraction es raffinage. Du sucre, èté—psarlamentérmes générance, des ménita des porfetismement es des nouvelles invention—psous cegeure d'industrice, de Des Expersants de ce produits " que dignes des boutes a técongenses quids avaient reques jes avaients de nouvernes per les dignes ests année, est a année, es il goute : Nous mentionment pouve ordre le d'ul prinsateur de contra la constant de la contra del la contra del la contra del la contra de la contra del la contra de la contra del la cont " Normitactionier (A. George Hellmanny Nigs, me de Charenton) underwo ylus babiler mecanicieur ""

Societé d'Incouragement pour l'Industrie eNationale ? Extrain du Proces-Verbal de la Séauce Genérale du Fluin 1850.

Comits des ants mecaniques relativienem ana diven porfectionnem apporté dans les machine à Iritures, broyen is sublanges de des due la Medaille de Matine en décense de Melanges les oubstances; la docieté, appronvam les conclusions du Rappora, décide que la Medaille de Matine en décense de Me Remann pour les motifices de montés en ences; a Me Remann comme ayamoblem la Médaille, de Retine, après avoir entendrele Rapport qui lui a di fair an nom de Conseils d'administratione, par M. Denoir membre du P

This Copic conforme.

Chierry frices, cité Bongère, 1. Paris

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#### GREAT EXHIBITION

OF

HE WORKS OF INDUSTRY OF ALL NATIONS,

LIST OF ARTICLES EXHIBITED IN CLASS VI., No. 232.

BY

#### HOLTZAPFFEL & CO.,

ENGINE, LATHE, AND TOOL MANUFACTURERS,
64, CHARING CROSS, AND 127, LONG ACRE, LONDON.

orr. - Holtzapsfel. Co.'s stands will be found near the Hydraulic Machines, in the department of Machinery in Motion, on the North-West side of the Building.

#### APPARATUS

FOR

# PLAIN AND ORNAMENTAL TURNING

IN IVORY, WOOD, AND OTHER MATERIALS,

ADAPTED PRINCIPALLY FOR THE USE OF AMATEURS.

FIVE INCH CENTER LATHE, with iron heads, screw mandrel, but throughout, hardened, and working in hardened steel collars. Six a screw guides, and apparatus for the same; metal pulley with diverplate, adjusting index, and segment stop. Cylinder popit head, a leading screw, pointed and hollow centers, and flange for boring. But collar, rest and three tees, oil-can, key, and lever.

Mounted on a double frame of "Bois de Natte," with iron beam double bevil wheel, overhead motion for driving the revolving cutters as of drawers to contain the several apparatus, and cylinder cover with the secure the lathe and drawers.

40 CHUCKS FOR FIXING WORRS IN THE LATHE; viz., 12 box-wood particles, 6 box-wood spring chucks, with brass rings, 6 brass plain chan 6 brass spring chucks, 1 each, prong, steel-worm, square-hole, drawning-center, die, self-centering wire, self-centering disk, double sere and drum chucks.

5 CHUCKS FOR ORNAMENTING THE SURFACES OF WORKS IN THE LATHE; The Eccentric chuck, Oval chuck, Spherical chuck, Simple Geometric chuck, and Compound Geometric chuck, with the additional spiral movement registered by J. Cooper, Esq.

COMPOUND SLIDING REST, with cradle for setting the main slider right angles for turning surfaces or cylinders, elevating screw for adjustithe tool for height of center. Receptacle slide for holding small or we fixed tools, or revolving cutters, which are placed under the guidance a lever or a leading screw at pleasure, with guide and stop screw regulate the penetration of the cutting tools. The slide rest is proved with the means of placing both the main and receptacle slides at angles to the lathe bearers, and to each other, and is also fitted and guide for slender turning, and apparatus for turning curvilinear was such as vases, &c., under the guidance of templets or shaper place which govern the motion of the receptacle slide that carries either a fixed tools, or revolving cutters.

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APPARATUS FOR CUTTING SORRWS AND TWISTED WORKS by connecting a mandrel of the lathe to the screw of the slide rest, by a series change wheels mounted on a radial arm, so as to serve for cutting the and left handed screws of great numbers of pitches. The first threads or pitches—namely, from 100 to 300 to the inch,—are ployed for self-acting turning, or turning smooth cylinders mechanism the threads somewhat coarser—say from 2 to 50 threads to the incharge used for cutting the ordinary screws required in mechanism, and

coarsest threads or pitches from 1 to 7 inches rise in each revolution, re employed, in conjunction with revolving and figured cutters, for making twisted or helical works which are also known as of the lizabethan style of decoration.

RECOLVING TOOLS to fit the receptacle slide of the slide-rest, adapted or producing a great variety of plain and ornamental devices in any position on regular or irregular forms; viz., Drilling instrument for performing and ornamenting works in the lathe. Universal cutting frame, in which the cutters may be made to revolve in the vertical, the horizontal, and any intermediate plane. Vertical cutting frame, a more simple and ompact instrument, adapted to the vertical position only. Horizontal utting frame, with three spindles adapted to receive cutters of different lizes and forms, either for ornamenting works in wood or ivory, or cutting the teeth of wheels, grooves, and other small works in metal.

For the AND ELLIPTICAL CUTTING FRAMES, for ornamenting the surfaces of urned works with simple or compound patterns of the same general haracters as those produced by the eccentric, oval, and geometric chucks.

CAS OF SLIDE-REST TOOLS, drills, and cutters, adapted for use in

he slide-rest and the various cutting frames.

CASE OF INSTRUMENTS for sharpening and polishing the straight and ugular edges of tools employed in ornamental turning.

CASE OF INSTRUMENTS for setting bead tools and drills.

CASE OF POLISHING AND LACKERING APPARATUS.

TOC. CUPBOARD, containing a selection of seventy-five tools for handbraing, in hardwood fluted handles.

TOC. CUPBOARD, with Glazed Doors, containing a selection of sixty-four cols for hand-turning, in ivory fluted handles.

FIVE INCH CENTER LATHE, with iron heads, screw mandrel, bored broughout, hardened, and working in hardened steel collar. Six steel crew guides, and apparatus for the same. Metal pully with division plate, 3 indexes, and segment engine. Cylinder popit head, with bading screw, pointed and hollow centers, and flange for boring. Boring collar, and sliding guide for slender turning. Rest and three ees, oil-can, key and lever.

Mounted on a double frame of mahogany, with iron bearers, double bevil wheel, overhead motion for driving the revolving cutters, hand motion, case of drawers to contain the apparatus, and cylinder cover with lock to secure the lathe and drawers.

THUCKS FOR FIXING WORKS IN THE LATHE; viz., 24 box-wood plain thucks, 6 box-wood spring chucks, with brass rings, 6 brass plain chucks, brass spring chucks with steel rings, 9 pairs of brass chucks with box-wood springs, brass rings and brass sliders, 6 wire chucks with steel rings, 6 arbor chucks, 1 arbor chuck with six circular cutters, 2 arbor chucks with cones and screws, 1 receptacle chuck for arbors, 1 running renter chuck with carrier and key, 2 steel worm chucks, 1 prong chuck, square hole chucks, 2 die chucks with six screws each, 2 die chucks

with slide, I drill chuck with 12 drills, 24 chucks fitted with boring for wood, 2 screw chucks with inside screws, 9 pairs of screw chucks small works, 6 screw chucks for eccentric turning, 2 wafer seal chuck flange chuck with dogs, I flange chuck with points, I branch chu with 4 branches and set of heads, I universal chuck with main screw two dogs.

10 CHUCKS FOR ORNAMENTING WORRS IN THE LATHR; viz., 1 Eccentric chu with ratchet wheel and detent, 1 Eccentric chuck with screw wheel a tangent screw, 1 Oval chuck with ratchet wheel and detent, 1 Straight; chuck, 1 Pillar fluting chuck, 2 Drawing board chucks for experimen patterns on paper, 3 Transfer chucks for adapting some of the fix chucks to all the chucks for ornamenting.

COMPOUND SLIDING REST, with cradle for setting the main slide right angles for turning surfaces or cylinders, with detent for setting at intermediate angles, and elevating screw for adjusting the tool to center of the mandrel. The tool slide is provided with guide a stop screws to regulate the penetration of the tools, and provision made for setting it at all angles to the lower slide. Additional recepts slide for large tools, revolving cutters and general apparatus.

Drilling instrument to fit the tool slide with 90 boring bits and hold in case.

Drilling instrument in steel stem, to fit the receptacle slide.

ECCENTRIC CUTTING FRAME in steel stem, and 12 dozen cutters ditto.

CASE OF 84 SLIDE-REST TOOLS, with 1 spring socket handle.

CASE OF INSTRUMENTS for sharpening and polishing the straight a angular edges of tools.

CASE OF INSTRUMENTS for setting bead tools and drills.
CASE OF POLISHING AND LACKERING APPARATUS.

MAHOGANY BOX, with one drawer containing 12 cylinder bits in handles, and 12 pairs of taps in fluted handles, and 12 pairs of taps to fit the wrenches.

TOOL CABINET of mahogany in two parts, with folding doors to ear.

The doors to the upper part are fitted with plate glass, and the principal portion of the detached apparatus is inlaid in sloping shelves. It lower part is fitted with drawers and racks for receiving wood chuck materials, tools, &c.

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ROSE ENGINE, with cast-iron mandrel frame, 12 inches high from the fix centers to the mandrel; with 2 brass levers steeled in front to fix mandrel frame at the time of chucking and plain turning; and the spiral springs contained in brass boxes, for giving the rocking appumping motions. The springs have tangent screw adjustments regulate their tension.

The mandrel is hardened, bored throughout, and works in hardened steel collars, fitted on a sliding socket; 6 steel screw guides, and in

appropriate apparatus for cutting screws. The mandrel has two barrels, together containing 18 rosettes, having patterns of different numbers and forms, and 6 extra rosettes in halves. The one barrel has a dividing plate and detent, that are used for shifting the rosettes the half, third, or fourth parts of their respective figures. The other barrel has a tangent screw adjustment, for finer subdivisions, and to enable the two barrels to be used conjointly in making compound figures.

Two triangular bars of steel are fixed parallel with the mandrel on brass brackets, and are fitted with carriages that grasp the fixed rubbers against which the rosettes act. Ten ivory rubbers for the rosettes; 6 steel rubbers; 4 steel rubbers with rollers, and six T formed rubbers

of different curvatures, for working interrupted figures.

Shifting carriage for the triangular bar, with steel slide at the

bottom for easy removal.

Steel triangular bar, with front center, for turning long works of small diameter with the side motion; the same bar is also fitted with a front center with steel center screw; a front center with steel cylinder and screw at the back for turning with the end motion, and an additional head to serve as a collar head and sliding guide, with an angular hole made to enlarge or contract by means of a screw.

Cylinder popit head, with leading screw, 2-pointed and two hollow centers, and flange for boring: common rest and three tees; to be used when the mandrel is simply employed as that of a common lathe, for

chucking and surfacing the works to be rose-engine turned.

Mounted on a strong frame of mahogany, having a case with drawers secured with one lock, iron fly wheel, with elevating apparatus, and treadle for the same; also a hand motion with sliding spindle and elevating apparatus.

VISION PLATE, in halves, to fit in front of the barrel of rosettes, with

sliding spring index to fit the carriage of the triangular bar.

EGMENT ENGINE, in halves.

BLIQUE MOTION.

ET OF TWELVE ROSETTES, in halves, for turning small diameters, in mahogany case.

ET OF TWELVE ROSETTES, in halves, for turning polygons, in

mahogany case.

6 CHUCKS for fixing works in the Rose Engine, viz., 24 box-wood plain chucks of large diameter, 24 ditto of small diameters, 6 box-wood spring chucks with brass rings, 6 brass plain chucks, 6 brass spring chucks with steel rings, 6 brass arbor chucks, 6 steel arbor chucks, 2 steel worm-chucks, 2 double screw chucks for receiving small wood chucks, 2 pairs of double screw chucks to match, for turning boxes, 6 sets of double screw chucks with 2 taps and 1 cylinder bit to each set, 3 cement chucks, 1 clamp chuck with dogs and rings, 1 branch chuck with 4 branches and screw heads, 1 universal chuck with two slides moving equally.

CHUCKS FOR ORNAMENTING WORKS IN THE ROSE-ENGINE, VIZ., 1 Eccentric chuck, 1 Oval chuck, 1 Compound Oval and Eccentric chuck, 1 Complete

Geometric chuck with additional tangent screw movement, 1 Pillar flutar chuck, 1 Spherical chuck, 1 Straight line chuck, 3 Drawing board chuck

for experimental patterns on paper.

COMPOUND SLIDING REST, with cradle, &c., for setting the slides at a angles to the mandrel, elevating, guide and stop screws complete, 6 doze slide rest tools contained in a mahogany case, and 6 steel rubbers five to the front of the tool slide to regulate the penetration of the tool is irregular works in metal.

TOOL CABINET, of mahogany, in two parts, with folding doors to eat part. The doors to the upper part are fitted with plate glass, and the principal portion of the detached apparatus is inlaid in sloping shelves. The lower part of the cabinet is fitted with 8 drawers for receiving we chucks, materials, &c., and also 6 racks containing a selection of 75 to 3 for hand turning.

# SPECIMENS OF ORNAMENTAL TURNING,

IN IVORY AND HARD WOOD,

#### DESIGNED AND EXECUTED PRINCIPALLY BY AMATEURS,

And Illustrative of the Works produced by various apparatus employed in the Lathe and Rose Engine, including,

AN ETAGÈRE, or set of four Glass Shelves, supported on eighteen iver twisted pillars. Jewel Box, Cotton Box, Oval Cigar Cases, Pencil Ber Bodkin Case, and Seal Handle, in ivory, by a Nobleman.

TURKISH MOSQUE, Gothic Archway, Candelabra with three branched Mausoleum, Temple, two Vases, two Candlesticks, and Snuff-Box, a ivory; two Vases in cocoa-wood and ivory, Snuff-box in cocoa-wood, by E. Stodart, Esq.

TURKISH OBELISK, and a Pagoda, in ivory, by S. Buckle, Esq.

CANDELABRA, with four branches, and a Temple, in ivory, by H. HARDMAN, Esq.

JEWEL BOX, two Vases, and Snuff-Box, in ivory, by Capt. G. C. CLARKE. IVORY VASE, by an Amateur.

TWO TEMPLES, in ivory, by W. S. CHARLTON, Esq. TEMPLE, in ivory, by Lieut. H. Sidney Smith, R.N.

SET OF DRAUGHTSMEN, and two Dice Boxes, in ivory, by an Amateur SPECIMENS OF GEOMETRIC TURNING, by H. Perigal, Esq., F.R.A.S. THERMOMETER STAND, and Compass Stand, by E. C. Ryley, Esq. SET OF DRAUGHTSMEN, by a Lady.

VASE, made of Egg-shell, by G. D. KITTOE, Esq.

IVORY VASE, by an Amateur.

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RING-HOLDER, in ivory, by a Lady.

Numerous other specimens, as Temples, Pagodas, Vases, Work-boxes, Watch-stand, Cigar-cases, Chessmen, Draughtsmen, Billiard Balls, &c., in ivery and other materials, as cannel coal, rhinoceros horn, and hardwood.

scellaneous Tools, employed in turning and other mechanical arts; as squares, bevils, and callipers of various forms; decimal, parallel, and sliding gauges, for accurately measuring works in decimal parts of the standard inch; sliding centers, for marking the centers of works preparatory to their being turned; proportional compasses and callipers; cylinder bits for boring; Archimedian, centrifugal, and ordinary drill-stocks; hand-plane for metal; geological hammers, and various other tools. IATEURS' TOOL CHEST, of mahogany, twenty-four inches long, the

tools handled in hardwood, and inlaid in separate compartments.

OSTADOMETER, for measuring the distances of inaccessible objects immediately and on the spot, by a direct reading without calculation, giving also their right-angled direction; principally adapted for taking offsets to any length in surveying with the chain. In filling in the details of a survey this instrument has been found to save a large portion of the

time and labour, and to give increased accuracy.

and calculating, combining economy with moderate accuracy, applicable to engineering, architectural, and general science. Pocket-book scales, in card-board and electrum, which combine the protractor and all the usual scales for drawing, in a rectangle of 4½ by 2¾ inches. Odontographs, in card-board and brass, for setting out the forms of teeth of wheels, so that any two wheels of a set may work truly together. Arcograph, for drawing the arcs of large circles.

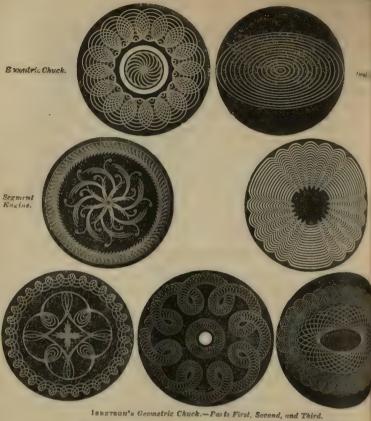
RD-BOARD CURVES, from one inch to two hundred and forty inches

radius, for setting out railway and other curves.

N-HOLDER FOR ENFEEBLED HANDS, for the use of those persons who are deprived of the free use of the fingers.

ARLOUR PRINTING PRESS AND TYPE CASE, adapted to the use of Amateurs, and combining simplicity of construction with portability and economy. Larger press on the same construction, suitable to printing the half sheet of foolscap paper.





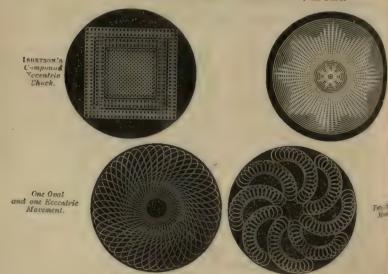
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HOLTZAPPER & Co.'s Compound Oval and Eccentric Chuck.

#### GREAT EXHIBITION

OF

HE WORKS OF INDUSTRY OF ALL NATIONS,

AST OF ARTICLES EXHIBITED IN CLASS VI., No. 232.

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BY

HOLTZAPFFEL & CO.,

ENGINE, LATHE, AND TOOL MANUFACTURERS, 64, CHARING CROSS, AND 127, LONG ACRE, LONDON.

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#### APPARATUS

FOR

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IN IVORY, WOOD, AND OTHER MATERIALS.

ADAPTED PRINCIPALLY FOR THE USE OF AMATEURS.

FIVE INCH CENTER LATHE, with iron heads, screw mandrel in throughout, hardened, and working in hardened steel collars. Suscrew guides, and apparatus for the same; metal pulley with displate, adjusting index, and segment stop. Cylinder popit head a leading screw, pointed and hollow centers, and flange for boring. For collar, rest and three tees, oil-can, key, and lever.

Mounted on a double frame of "Bois de Natte," with iron beaudouble bevil wheel, overhead motion for driving the revolving cutters of drawers to contain the several apparatus, and cylinder cover with to secure the lathe and drawers.

40 CHUCKS FOR FIXING WORKS IN THE LATHE; viz., 12 box-wood perchecks, 6 box-wood spring chucks, with brass rings, 6 brass plain chuck 6 brass spring chucks, 1 each, prong, steel-worm, square-hole, running-center, die, self-centering wire, self-centering disk, double crand drum chucks.

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APPARATUS FOR CUTTING SCREWS AND TWISTED WORKS by connecting mandrel of the lathe to the screw of the slide rest, by a series change wheels mounted on a radial arm, so as to serve for cutting the right and left handed screws of great numbers of pitches. The interests or pitches—namely, from 100 to 300 to the inch,—are of ployed for self-acting turning, or turning smooth cylinders mechanical the threads somewhat coarser—say from 2 to 50 threads to the inch.

are used for cutting the ordinary screws required in mechanism, and the coarsest threads or pitches from 1 to 7 inches rise in each revolution, are employed, in conjunction with revolving and figured cutters, for making twisted or helical works which are also known as of the Elizabethan style of decoration.

for producing a great variety of plain and ornamental devices in any position on regular or irregular forms; viz., Drilling instrument for perforating and ornamenting works in the lathe. Universal cutting frame, in which the cutters may be made to revolve in the vertical, the horizontal, and any intermediate plane. Vertical cutting frame, a more simple and compact instrument, adapted to the vertical position only. Horizontal cutting frame, with three spindles adapted to receive cutters of different sizes and forms, either for ornamenting works in wood or ivory, or cutting the teeth of wheels, grooves, and other small works in metal.

ENTRIC AND ELLIPTICAL CUTTING FRAMES, for ornamenting the surfaces of turned works with simple or compound patterns of the same general characters as those produced by the eccentric, oval, and geometric chucks.

ME OF SLIDE-REST TOOLS, drills, and cutters, adapted for use in

the slide-rest and the various cutting frames.

ISE OF INSTRUMENTS for sharpening and polishing the straight and angular edges of tools employed in ornamental turning.

ASE OF INSTRUMENTS for setting bead tools and drills.
ASE OF POLISHING AND LACKERING APPARATUS.

OL CUPBOARD, containing a selection of seventy-five tools for hand-turning, in hardwood fluted handles.

OOL CUPBOARD, with Glazed Doors, containing a selection of sixty-four tools for hand-turning, in ivory fluted handles.

# SPECIMENS OF ORNAMENTAL TURNING,

IN IVORY AND HARD WOOD,

DESIGNED AND EXECUTED PRINCIPALLY BY AMATEURS.

I Mustrative of the Works produced by various apparatus employed in the Lathe and Rose Engine, including,

N ETAGERE, or set of four Glass Shelves, supported on eighteen ivory twisted pillars. Jewel Box, Cotton Box, Oval Cigar Cases, Pencil Box, Borkin Case, and Seal Handle, in ivory, by a Nobleman.

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RKISH MOSQUE, Gothic Archway, Candelabra with three branches, Mausoleum, Temple, two Vases, two Candlesticks, and Snuff-Box, in ivory; two Vases in cocoa-wood and ivory, Snuff-box in cocoa-wood, by E. STODART, Esq.

RKISH OBELISK, and a Pagoda, in ivory, by S. Buckle, Esq.

ANDELABRA, with four branches, and a Temple, in ivory, by H. HARDMAN, Esq.

JEWEL BOX, two Vases, and Snuff-Box, in ivory, by Capt. G. C. CLARKE IVORY VASE, by an Amateur.

TWO TEMPLES, in ivory, by W. S. CHARLTON, Esq.

TEMPLE, with Corinthian columns, in ivory, by Lieut. H. Sidney Smith, RY SET OF DRAUGHTSMEN, and two Dice Boxes, in ivory, by an Amateus SPECIMENS OF GEOMETRIC TURNING, by H. Perigal, Esq., F.R.A. THERMOMETER STAND, and Compass Stand, by J. RYLEY, Esq. SET OF DRAUGHTSMEN, by a Lady.

VASE, made of Egg-shell, by G. D. KITTOE, Esq.

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RING-HOLDER, in ivory, by a Lady.

Numerous other specimens, as Temples, Pagodas, Vases, Work-boxes, Water stand, Cigar-cases, Chessmen, Draughtsmen, Billiard Balls, &c., in wand other materials, as cannel coal, rhinoceros horn, and hardwood.

MISCELLANEOUS TOOLS, employed in turning and other mechanics arts; as squares, bevils, and callipers of various forms; decimal, paradand sliding gauges, for accurately measuring works in decimal parts of us standard inch; sliding centers, for marking the centers of works paratory to their being turned; proportional compasses and calliper cylinder bits for boring; Archimedian, centrifugal, and ordinary drastocks; hand-plane for metal; geological hammers, and various other teasures.

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APO-STADOMETER, for measuring the distances of inaccessible objection immediately and on the spot, by a direct reading without calculate giving also their right-angled direction; principally adapted for take offisets to any length in surveying with the chain. In filling in the determinant of a survey this instrument has been found to save a large portion of the time and labour, and to give increased accuracy.

ENGINE-DIVIDED SCALES, of equal parts, on card-board, for drawls, and calculating, combining economy with moderate accuracy, applicate to engineering, architectural, and general science. Pocket-book scales, card-board and electrum, which combine the protractor and all the usscales for drawing, in a rectangle of 4½ by 2¾ inches. Odontograph, card-board and brass, for setting out the forms of teeth of wheels, so the any two wheels of a set may work truly together. Arcograph, and drawing the arcs of large circles.

CARD-BOARD CURVES, from one inch to two hundred and forty incirradius, for setting out railway and other curves.

PEN-HOLDER FOR ENFEEBLED HANDS, for the use of those person who are deprived of the free use of the fingers.

PARLOUR PRINTING PRESS AND TYPE CASE, adapted to the use Amateurs, and combining simplicity of construction with portability economy. Larger press on the same construction, suitable to print the half sheet of foolscap paper.

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OLD ALSO BY HOLTZAPFFEL AND CO., 64, CHARING CROSS, AND 127, LONG-ACRE, ENGINE, LATHE, AND TOOL MANUFACTURERS; TROUGHTON AND SIMMS, 136, FLEET STREET, OPTICIANS; R. B. BATE, 21, POULTRY, OPTICIAN AND AGENT FOR ADMIRALTY CHARTS, &c.; J. AND J. THOMSON, MANCHESTER; AND AGNEW AND ZANETTI, MANCHESTER.

OF WHOM THE SCALES MAY ALSO BE HAD.

## THE LIST OF SCALES

IS FOLLOWED BY AN ABRIDGMENT

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M PAI RE OF

HOLTZAPFFEL & Co.'s

GENERAL CATALOGUE.

Fourth Impression, Nov. 1834.

# A LIST

or

# SCALES OF EQUAL PARTS,

APPLICABLE TO VARIOUS PURPOSES OF

#### ENGINEERING,

#### ARCHITECTURAL AND GENERAL SCIENCE.

MANUFACTURED BY

#### HOLTZAPFFEL & Co.

THIS LIST, AND THE EXPLANATORY REMARKS, ARE EX-TRACTED FROM A PAMPHLET DESCRIBING THE NEW SYSTEM OF SCALES, WITH NUMEROUS PRACTICAL EXAMPLES, ILLUS-TRATED BY A FAC-SIMILE OF THE SCALES, ON COPPER-PLATE, &c.—Price 28. 6d.

PUBLISHED BY JOHN WEALE, ARCHITECTURAL LIBRARY, 59, HIGH HOLBORN, LONDON.

SOLD ALSO BY HOLTZAPFFEL AND CO., 64, CHARING CROSS, AND 127, LONG-ACRE, ENGINE, LATHE, AND TOOL MANUFACTURERS; TROUGHTON AND SIMMS, 136, FLEET STREET, OPTICIANS; B. B. BATE, 21, POULTRY, OPTICIAN AND AGENT FOR ADMIRALTY CHARTS, &C.; J. AND J. THOMSON, MANCHESTER; AND AGNEW AND ZANETTI, MANCHESTER.

OF WHOM THE SCALES MAY ALSO BE HAD.

1838.

LONDON:

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dei M PA RE PRINTED BY T. BRETTELL, RUPERT STREET, HAYMARKET.

# INTRODUCTION.

"Having had occasion, in 1833, for several Drawing Scales, much smaller than those I generally employed, and not expecting to require them beyond the moment, it occurred to me that my wants might be very easily and accurately supplied, by ruling them on card paper, by means of a temporary adaptation of one of the machines used in our manufactory. The scheme answered well, and presented so many advantages, that I determined, at some convenient opportunity, to follow it out more extensively.

"Circumstances have latterly induced me to resume the matter, and I have been led to pursue the subject of the Dividing Engine; and, as a consequence, the application of Scales of equal parts, very much beyond my first intentions: and having obtained results both curious and important, I propose to give a short account of the inechanical structure of the Scales, and to enumerate those prepared for the usual purposes of drawing and measurement;—to describe the general principle, and the simple application of the *Proportional* Scales to various kinds of numerical, geometrical, and physical quantities,

some of which are particularized,—and also to explain the four series of *Comparative* Scales, for the comparison of all the various denominations of weights and measures of all countries, with one another: which several operations would otherwise require constant and tedious calculations or very extensive sets of tables, few of which exist. The authorities consulted on this subject, will be mentioned in the order in which reference has been made to them.

"In conclusion, I shall advert to the extended capabilities of my modification of the right line Dividing Engine, which differs very considerably from any with which I am acquainted, and to the graduation of instruments generally.

"I cannot reasonably expect to have been fortunat throughout in the selection of Scales, from amongst the multiplicity which have presented themselves to my mind the more especially as many of the subjects to which they apply are foreign to my usual pursuits; I have principally aimed at pointing out general applications; shall therefore receive with gratitude any suggestion calculated to extend the usefulness of the project."

C. HOLTZAPFFEL.

London, 20th March, 1838.

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As the most convenient arrangement, all the Scales are enclosed in sealed envelopes, containing small numbers, designated by the letters A, B, C, D, agreeably to the annexed list, so that any selection can be made. The less usual Scales will have manuscript titles, as printing is only applicable to large numbers.

All the Card Scales with printed titles, are sold at the rate of Nine Shillings the Dozen.

Those with manuscript titles, at Ten Shillings and Sixpence the Dozen.

A single Scale of any kind at One Shilling.

Any other Scales differing from those described, either in character, or in magnitude of divisions, will be laid down to order. An advance will be made in the price of these according to circumstances.

Neat Paper Cases, covered with cloth, with separate compartments, each to contain two dozen Scales, at the following prices:

Cases for 2, 4, 6, 8, 10, 12, dozen. 3/6 4/6 6/ 7/6 9/ 10/6 each.

Mahogany Cases, with Locks and Keys, &c.

All the Scales described in this list may be had in electrum, brass, ivory, wood, &c., of the usual, and of several new forms, in which the same features of economy, distinctness, and compactness are carried out.

# ENGINE-DIVIDED SCALES,

MANUFACTURED BY HOLTZAPFFEL & Co.

NOTE.—Each of the Card-paper Scales is ruled in the Dividing Engine after the figures have been printed.

#### ORDINARY DRAWING SCALES.

(See Pamphlet, page 12.)

THE usual reductions of the foot, from one sixteenth of an inch, to 6 inches to the foot, including three lines of inches, divided into eighths, tenths, and twelfths, and the English foot decimally divided.

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A —  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$ , 3, Inches to the foot.

 $B - \frac{1}{8}$ ,  $\frac{3}{8}$ , 2, 4, 6, {And a line of inches and eighths.

 $C \longrightarrow \frac{1}{12}$ ,  $\frac{5}{8}$ ,  $1\frac{1}{4}$ ,  $2\frac{1}{2}$ , 5, {And a line of inches and tenths.

 $\mathbf{D} = \frac{1}{16}, \frac{3}{16}, \frac{5}{16}, \frac{7}{8}, \quad \begin{cases} \mathbf{A} & \text{line of inches and twelfths, and the English decimal foot.} \end{cases}$ 

#### BISECTING SCALES.

(Page 12.)

From \( \frac{1}{4} \) to 6 inches to the foot, intended as companions to the above. They are for setting off quantities on each side of a central line; the divisions are of half their nominal values, and they are numbered both ways, the zero being in the center.

A  $-\frac{1}{4}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$ , 3, Inches to the foot. B  $-\frac{3}{8}$ ,  $\frac{5}{8}$ ,  $1\frac{1}{4}$ , 2, 4, 6,

#### CHAIN SCALES.

(Page 13.)

A - 1,  $1\frac{1}{2}$ , 2, 3, 4, 6, Chains to the inch. B - 8, 10, 16, 20, 30, 40,

Scales suitable to the plans required under the Tithe Commutation Act, duly attested at Somerset House.

#### TEN FOOT SCALES.

(Page 13.)

A  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$ , and 2 inches to the ten feet. For making parochial and district plans, &c.

#### DECIMAL SCALES.

(Page 18.)

A — 2, 4, 6, 8, 10, 15, Tenths. B — 1, 3, 5, 7, 9, 12, ——

Sub-divided decimally or duo-decimally.

#### RAILWAY SCALES.

(Page 13.)

A.—Horizontal scales of 1, 2, 3, 4, 5, and 6 inches to the mile.

B.—Vertical scales of  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$ , and 2 inches to the 100 feet. These include the Parliamentary railway scales; and also the one suitable to the Ordnance maps. The horizontal Scales may be read in miles, furlongs, and poles, or in miles and chains.

#### SCALES FOR DEGREES, MINUTES, &c.

(Page 14.)

A  $-\frac{1}{4}$ ,  $\frac{1}{2}$ , 1, 2, 4, 6, Inches to the degree.

These serve also as modulus Scales, for the architectural division of columns.

#### SCALES FOR THE TEETH OF WHEELS.

(Pages 14 & 15.)

For setting off the diameters of wheels according to each of the modes of estimating the pitch or size of the teeth\*.

These are laid down either as single Scales, of the full size for the workshop, of the half size, or as the radii, for the drawing office, or still further reduced if required

But another method of great utility, but not so well known, is to consider the diameter of the pitch circle as divided into as many equal part as the wheel possesses teeth, and to use these equal parts as a measur of comparison for the size of the teeth. The magnitude of these parts indicated either by stating the number of them contained in one inch, or in one foot, and accordingly the teeth are said to be reckoned in Incl. Pitch or in Foot Pitch.

Thus small wheels are said to be of ten inch pitch when they contain ten teeth for every inch of the diameter of the pitch circle. The diameter of a wheel of 97 teeth, 8 inch pitch, measured on the pitch circle, inch pitch

the projection of the teeth beyond the pitch circle, making the extrem

diameter — = 12‡ inches.

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<sup>•</sup> The size of the teeth of wheels is estimated in two ways. The most general is to indicate it by the length of a tooth and space, measure upon the circumference of the pitch circle, or geometrical diameter; this usually called circular pitch.

<sup>= 121</sup> inches, and a quantity equal to two teeth is usually allowed to

or they are arranged in groups, according to the following schemes: -

A.—A series of five Scales, comprising eighteen sizes of Teeth, from  $\frac{1}{4}$  to  $3\frac{1}{2}$  Inch Pitch, according to the usual method of circular Pitch. The  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1, and 2 inch, on one Scale, and so on.

B.—A similar series of five Scales, also including eighteen sizes of Teeth, from 3 to 40 Inch Pitch, according to the diametrical mode of estimation.

The Odontograph, an instrument or scale for setting out the forms of the teeth of wheels, or of the templets and cutters used in their construction, by circular arcs, so that any two wheels of a set may work truly together, according to the method invented by Professor Willis, of Cambridge.

One Scale for external and internal teeth of all the common circular Pitches, from \(\frac{1}{4}\) to 3\(\frac{1}{3}\) inch; and a similar Scale for the diametrical Pitches.

#### FOREIGN SCALES.

(Page 15.)

The French foot and inches, French lines marked off in tens, and French decimètres, &c.

The three above named, along with the different readings of the English foot, namely in eighths, tenths, and twelfths, and the foot divided into ten decimal inches made up in one parcel.

Scales laid down to any of the values given in Kelly's Universal Cambist to order.

# PROPORTIONAL SCALES.

#### PROPORTIONAL SCALES FOR LINES.

(Pages 16 to 21.)

A = 2, 4, 6, 8, 10, 12.

B - 14, 16, 18, 20, 22, 24.

C - 1, 3, 5,  $\gamma$ , 9, 11.

D - 13, 15, 17, 19, 21, 23, 25.

#### PROPORTIONAL SCALES FOR PLANES.

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(Pages 21 & 22.)

A - 2, 4, 6, 8, 10, 12.

B - 1, 3, 5, 7, 9, 11.

## PROPORTIONAL SCALES FOR SOLIDS.

(Pages 21 & 22.)

A — 2, 4, 6, 8, 10, 12.

B — 1, 3, 5, 7, 9, 11.

The foregoing scales perform three of the offices of the proportional compasses, but according to the usual construction of that instrument, in a much more extended manner both as to size and ratios, and without incurring the risk either of imperfect adjustment before use, or of accidental change during the same. The fourth line of divisions on that instrument, for circles or polygons, is so little used, that the scales adapted to that purpose have not been laid down.

They will be found suitable to the copying of drawings derived from various sources in one common Scale, for more easy comparison; and also to the enlargement of drawings to the full extent of the paper, or to their diminution to the size of the intended engraving.

Also to the making of sets of drawings in any series, arithmetical or geometrical, &c.

The Scales for Planes and Solids have the same generality of application in regard to the areas of superficies, or the contents of solids; they are particularly suitable to many purposes in engineering, &c., which matters are fully explained, with examples.

The Table calculated expressly for the Proportional Scales, containing all possible fractions that can be formed, from the numbers 1 to 25, &c. amounting to 400, showing that the Scales possess that number of distinct applications, accompanies the pamphlet; it is also printed separately on card, price Nine Pence.

# MISCELLANEOUS PROPORTIONAL SCALES.

(Page 23.)

These perform the function of any of the constant multipliers, occurring in geometrical and other science, some examples of which are named.

The diameters and circumferences of circles.

The sides and diagonals of squares.

The areas of squares and circles.

The contents of cubes and spheres.

The English and French degrees of 360 and 400.

The increase of size requisite in the patterns for iron castings, to compensate for their contraction in cooling, amounting to about 1 and 2 per cent., giving rise to the one and two contraction rules.

# PROPORTIONAL SCALES FOR THE WEIGHTS AND MEASURES OF BODIES.

(Pages 24 to 30.)

This series of scales is derived from the tables of Specific Gravities.

They serve for showing the relative weights of equal bulks of any of the bodies for which they are laid down; and also the relative bulks of equal weights of bodies; and the corresponding weight of any number of cubic yards, feet, or inches, of any of the substances, or the reverse, &c., &c., as fully described in the sketch.

Any two of these Scales may be used together, so that a series of 20, would give 400 distinct ratios, of the relative weights and measures of bodies. They are illustrated by a fac-simile, engraved by the Dividing Engine, on copper-plate.

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These Scales will be laid down to order, from any of the Tables of Specific Gravities, &c.

# SCALES FOR THE GENERAL COMPARISON OF MEASURES AND WEIGHTS.

(Pages 30 to 35.)

Comprising in four great series: -

First,—The linear measures of all denominations, of all countries.

Second,—The cubic measures, and measures of capacity.

Third,—The superficial or square measures.

Fourth,—The avoirdupois or commercial, and the troy or gold and silver weights of all countries.

All conversions of the different weights and measures represented by these Scales, may be read off on the inspection of any two of the same series, after the manner of the Scales for substances just mentioned.

Scales from the extensive tables of foreign measures in Kelly's Universal Cambist, a work compiled under the sanction of the government, will be graduated to order.

The following list has been made out, comprising, in a small number, several of the proposed applications of Scales of equal parts, of general utility:

# MISCELLANEOUS COLLECTION.

SIX VARIETIES.

A.—Inches and eighths, tenths, and twelfths, and the English decimal foot;—French foot and inches, French foot, marked off in lines, French decimètres, Rhineland foot;—Proportional Scales for Weights and Measures of Bodies, namely, for castiron, lead, granite, and for cubic-feet.—Total 12.

B.—Scales for the general Comparison of Weights and Measures.—English foot, French foot; French decimal system, in one scale, French toise;—English cubic feet, and imperial gallons; French decimal system, in one scale, French cubic feet;—English avoirdupois and troy pounds, French decimal system, and livre usuel.—Total 12.

# THE PRINCIPAL RESULTS OF THE NEW DIVIDING ENGINE.

First,—A division of the foot or inch into any number of equal parts.

Reduced Scales of 1, 2, 3, 4, 6, &c. inches to the mile, fathom, chain, yard, foot, degree, day, hour, minute, &c., can be marked off in accordance with the sub-divisions of the several measures, or after any arbitrary manner.

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Second,—A division of any quantity greater or less than the foot or inch, into any number of equal parts.

A given line, within the range of the instrument, can be divided into any number of equal parts.

Similar Scales to the above, therefore, whose length is any fractional part of the foot, may be likewise laid down; as,  $4\frac{1}{8}$ ,  $4\frac{1}{4}$ ,  $4\frac{3}{8}$ ,  $4\cdot378$ ,  $12\cdot7893$ , &c. inches to the foot, mile, degree, &c., and also Verniers for each.

This power necessarily includes the means of setting off any foreign measure or Scale, the value of which, (in English measure,) and the nature of whose sub-division are given; for example, 12.7893 inches English, divided into 144 lines, would be the French foot; and the half, third, fourth, &c. parts of this measure, would be the Scales of 6, 4, and 3 inches French to the foot, and so on.

It was the desire to employ this power usefully, which led to the design of the Proportional and Comparative Scales, already explained.

Third,—The construction of Scales of unequal parts, from their numeral values.

Scales may be laid down from tables of their value, either showing the quantity of each space or subdivision separately, or the distance of each from the zero of the Scale. Such as the logarithmic Scale employed in the common slide rule, trigonometric Scales of chords and tangents, and so on.

Fourth,—The production of enlarged or diminished Scales from the same series of numbers.

For example, a Scale of chords, or a complete slide rule, could be at once procured; say, 2, 3, 4,  $4\frac{1}{4}$ , 10.77, 12, 18, 24 inches long, &c.

Fifth,—The repetition of any given Scale of unequal parts in the same or altered dimensions.

Scales may be reduced or enlarged from any given original by inspection, without a knowledge of the numeral value of their divisions.

Sixth,—All modes of reading may be adopted, whether binary, decimal, duodecimal, sexagesimal, centesimal, or any other—and the lines may be made of any lengths, for narrow or wide Scales. And the same generality of process may be applied to circular dividing.

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## BRIDGED FROM THE GENERAL CATALOGUE.]

Fourth Impression, November 1834.

# HOLTZAPFFEL & Co.

Nº 64, CHARING CROSS,

TODETTE TRAFALGAR SQUARE, LONDON.

MANUFACTURERS OF

# ENGINES, LATHES, MECHANICAL AND EDGE TOOLS.

to the Honourable Board of Ordnance, and the East India Company.)

Cuttery in great Variety.

DEALERS IN

FOREIGN HARD WOOD, IVORY, AND OTHER MATERIALS.

FOR HOME CONSUMPTION, AND FOR EXPORTATION.

## Tools and Instruments for

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OKBINDERS.
FAR.
SIMAKERS.
FAR.
NITMAKERS.
NITMS.
LYERS.
HMAKERS.
WHAKERS.
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GARDENERS.
GUNMAKERS.
HARNESSMAKERS.
HATTERS.
JEWELLERS.
MACHINISTS.
MASONS.
MILLWRIGHTS.
MODELLERS.
OPTICIANS.
PAINTERS.
PLASTERERS.
PLUMBERS.

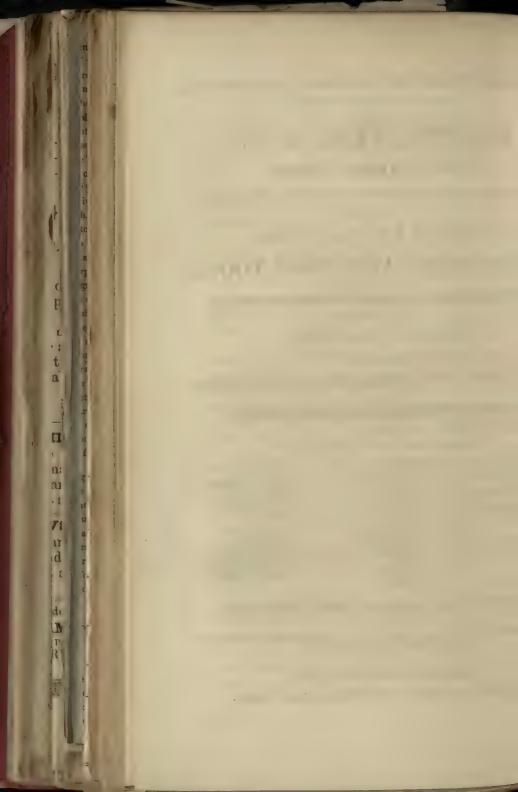
PRINTERS.
SADDLERS.
SEAL ENGRAVERS.
SHIPWRIGHTS.
SILVERSMITHS,
SMITHS.
SURVEYORS.
TINSMITHS.
TURNERS.
WATCHMAKERS.
WHEELWRIGHTS.
WIREDRAWERS.

Pantation Amplements of every Wescription.

Linds of Turning, Framing, and Smiths' Work, for Ornamental, Useful, or Experimental Purposes, made to Drawings or Models.

ENTRANCES TO THE MANUFACTORY,

Nº 127, Long Acre; and Nº 3, Chapel Court.



#### ADVERTISEMENT.

[November, 1834.]

HOLTZAPFFEL & Co. avail themselves of the opportuty of this fourth reprint of their Catalogue, to return to their numerous and distinguished Customers, and the public general, their grateful thanks for the very flattering occuragement and patronage they have received since their chablishment, a period of forty years.

They still continue to extend the general usefulness of hir Stock from a variety of sources: by the addition of many inelties of value, and by various improvements on former

onstructions.

In selecting those parts of their Stock which they do not Take, they employ the utmost care to obtain none but of the very Workmanship; and in the extensive portion of it, the work their own Manufactory, they aim at combining the advantages their former experience with the adoption of every improveant in the application of Machinery to Manufactures, likely

ensure accuracy of result.

In inserting the additions that will be found in this Intalogue, they have continued their original plan; every ricle which was described in the first, being repeated without deration throughout every subsequent impression.—The adtions have been always distinguished by annexing supplentary letters to the original numbers, as 330 A, 330 B, &c.; on a reference to the number explains the precise article quired, with the least possible trouble, from whatever pression it may be copied.

As before, the numbers of the additions are collected at the od, and H. & Co. beg attention to these, especially from such may possess a former impression. They have added some tes and references, in the hopes of improving the general stinctness of the Catalogue, and of conveying useful inforation, more particularly perhaps with regard to Lathes, and

heir Apparatus (see Notes pp. 26 and 31).

H. & Co. have some time since reduced the prices of the several Manufactures to a ready money standard, with which arrangement most of their Customers have expressed themselves it is a recent a mutual adventages.

satisfied, as it presents mutual advantages.

The continual changes which occur in the construction of many of the things specified, but more particularly in the details of Lathes, entirely prevent the possibility of the prices being given: this has often been mentioned as a matter of regret, and although it has been remedied in many instances yet it is impossible entirely to obviate it.

Every description of Turning, Framing, or Smith's Work. for common or experimental Purposes, is made to Drawings

Models.

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Drawings of all the different Articles made by H. & Co. for the use of those Gentlemen who are unacquainted with their technical names, may be seen in their Ware-rooms, where also are exhibited numerous specimens in Wood, Ivory, &c. of the simple and ornamental applications of the Turning and other Mechanical Apparatus.

H. & Co. beg to inform amateurs, that rooms are fitted upon the accommodation of Gentlemen who practice Turning or any other Mechanical Pursuit, and if assistance be required they personally attend, or provide experienced Workmen.

They request the attention of the Public to the extension supply of Cutlery of every description which they have of law years added to their general Stock. It is manufactured with the greatest care, and will bear every comparison.

## ALL ARTICLES ARE WARRANTED, AND EXCHANGED IF FOUND DEFECTIVE.

MERCHANTS SUPPLIED AS USUAL.

A great variety of Foreign Woods, Ivory, and all the different Materials for Mechanical purposes.

ENTRANCES TO THE MANUFACTORY,

Nº 127, Long Acre; and Nº 3, Chapel Court.

#### ADDRESS.

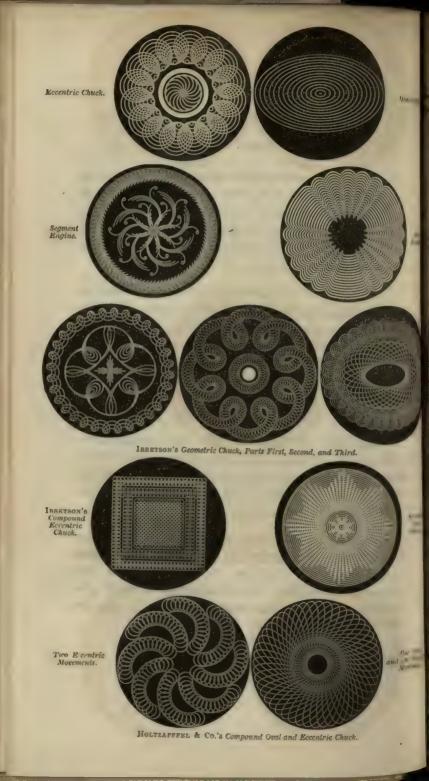
It is a source of extreme gratification to H. and Co., to notice the extent to which the Mechanical Arts, and more particularly that of turning, are pursued; the Turning Lathe, in its various modifications, assisted by its appendages of mechanism, being at present absolutely essential to some stage of every manufacture.

The cultivation of Mechanics by Gentlemen who have the advantages of general acquirements and of leisure, has given rise to many ideas and suggestions on their part, which have led to valuable practical improvements. H. and Co. have a large share of these obligations to acknowledge, but it would obviously be extremely difficult to particularize them, as the ultimate form of any successful piece of mechanism, is commonly the result of many successive modifications.

In some cases H. and Co. have been furnished by Gentlemen with the theoretical and general sketch of machines, the details of construction being entrusted partially, or wholly, to themselves; and in others they have merely carried into practical effect the finished designs.

To each of the Gentlemen by whom they have been favoured with communications, as well as to those whose names appear in this Catalogue, they beg to return their most sincere thanks, with the assurance that it would give them great pleasure to make further additions to this list under similar circumstances.

No. 64, Charing Cross, Nov. 1834.



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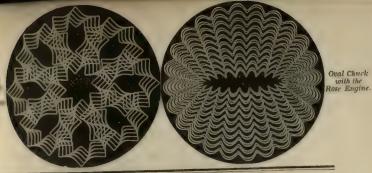
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Each Specimen on the other side is the result of a different Apparatus.

This page shows the effect of the same, when employed in

conjunction with the Rose Engine. .

Although only one Specimen of each individual Apparatus is given, yet the Patterns, which may be considered almost endless, depend on the skill and taste of the Operator.



Geometric Chuck combined with the Rose Engine.



Straight Line Chuck combined with the Rose Engine.



One Oval und man Movement.

HOLIZAPPPRI. & Co.'s Compound Oral and Eccentric Chuck, with the Rose Engine.

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# [ABRIDGED FROM THE GENERAL CATALOGUE.]

#### A LIST

OF

### MECHANICAL AND EDGE TOOLS,

CUTLERY, &c. &c.

7.E.S., for Carpenters, Coopers, and Shipwrights, 24/30/36/per doz.

VILS, various, and with complete Sets of Forging Tools, or Farrier's Tools 6, 8, 10, 12, £. per set i ANVIL STANDS, Tripod form, of Cast Iron, mounted on Springs ANVILS, small, for the bench or vice, Ordnance Pattern -Carpenters', with shanks for wood handles, 12 or 14 inches long, GURS  $\frac{1}{7}$ ,  $\frac{1}{7}$ ,  $\frac{1}{8}$ ,  $\frac{1}{9}$ ,  $\frac{1}{10}$ ,  $\frac{1}{12}$ ,  $\frac{1}{12}$ ,  $\frac{1}{12}$ ,  $\frac{1}{12}$ ,  $\frac{1}{12}$ , inch. Screw, with long shanks, and eyes for handles, Shell, with long shanks, and eyes for handles, \$\frac{1}{2}\$ \frac{1}{4}\$ \fra Socket - per set | Socket - per set |
Socket - per set |
Brad, Flooring, Sadlers', - - 8d. 9d. 10d. per doz.
Brad Awls, in Beech Handles - 1/3 1/6 per set of 6
Hardwood - 3/
Sench, Blocking, Broad, Butchers', Falling, Hedge, lee, Shampolled, Ship, Wedge, Wheelers' - - } 15 ES. B. BASKETS for Tools K IRONS, of various forms and sizes -WRENCHES, - 18/ 21/ 24/ per doz.
with 3 Shifting Sockets of different sizes - - each

in the form of a cross, with 3 squares & 1 screw driver ....

CHES, Jewellers' Benches, with complete Sets of Tools - -

Benches

Joiners'

Watchmakera' .....

4 ft. 5 ft. 6 ft. 4£. 5£. 6£.

See Nos. 522 A & B

Δ.	- 1.000 - 1.1 - 1.1
No.	
14 BEVILS	{     for Joiners 73 3 12 15 inches 15/ 17/6 21/ 27/6 per doz Plated 22/ 25/ 29/ 38/ each
	15/ 17/6 21/ 27/0 per doz.
15 ———	Turning each
16 A —	for Sliding Rests
	( Bevil, used in the Case of Pocket Instruments No. 529 )
16 A A	C, which indicates, when applied to a line of
	chords, the angle at which its legs are situated (Bevil, formed by dividing the Joint of the common)
16 A B —	Rule, after the manner proposed by R. CHRISTIE,
	Esg See Nos. 554 to 558
16 B. BLAST	TING TOOLS, for blasting Rocks, Roots of Trees, &c
17 BLOW PI	IPES, common 6/8/10/12/per doz.
18	with ball Dr. Wollaston's Pocket Blow Pipes
19	various, mounted on Tables, worked by the foot, &c.
20 BOOKBI	NDERS' TOOLS, in Chests, containing the Cutting \
20 00011211	Press. Plough, and Boards, the Sewing Press, and an
	assortment of all the Tools required in the process,
	conveniently arranged
130 DRAWIN	G INSTRUMENTS in the greatest variety, arranged
100 1011111111	in Sets for the pocket, &c., in Morocco, Skin, or }
	Mahogany Cases Beam Compasses, various, with shifting points and
139 A	Beam Compasses, various, with shitting points and
	cutters, with or without micrometers } Boards, of Mahogany, plain or clamped
139 B ———————————————————————————————————	with divisions round the margin
	( with a recess to receive the drawing square, )
139 D ——	to secure it from injury. H. & Co.'s pattern -)
140	Bow Pens and Compasses, with hair points - (CLEMENT'S Instrument for Drawing Ellipses. Re-)
140 A A	warded by the Society of Arts
140 A	warded by the Society of Arts } Elliptical Compasses, or Trammels
	(Pocket or Turn-in Compasses, in brass, electrum, t
141 ——	and silver, with or without lengthening bars)
141 a	Proportional Callipers, 6, 9, and 12 inch, with shift-
141 A A	ing centers
	( Proportional Callipers, with fixed or shifting centers, )
	having calliner bows at the one end, and divider \
141 AB	points at the other, for making accurate drawings
	of machinery and various objects, with great expedition. H. & Co.'s pattern
	(Proportional Compasses, 6, 9, and 12 inch, with)
141 4	shifting centers, divided for lines, surfaces, cubes,
141 A	and circles, with or without adjusting limbs and
	(Propositional Companion with fixed centers viz.)
141 A o	Proportional Compasses, with fixed centers, viz. wholes and halves, one to three, two to three, and
141 Aa	of various other proportions
141 B	
142 —	Drawing Pens and Pencils
142 A A	in Ivory Handles
142 A B	
142 A C	· · · · · · · · · · · · · · · · · · ·

ı	n e e e e e e e e e e e e e e e e e e e	£.	5.	d.
ř	DRAWING INSTRUMENTS.			
ı				
ı	and lengthening par, ui-			
ı	viders and scale; making altogether a complete			
Ų,	set of instruments, sufficient for most purposes, as			
ı			1	
ı	wards; they are either fitted in Cases or Pocket			
ı	Books. H. & Co.'s pattern		- 1	
ı	Bow Compasses, with pen and pencil points, with a			
1	central axis, spring socket, and spring adjustment.			
ı	French pattern  Bow Pens and Pencils, of the usual construction			
1	Bow Pens and Pencis, of the usual constitution			
1	or without needle points	1		
ı	(Bow Pens and Dividers, with springs and adjusting)			
	12 C 1 serews			
	Finishing Bow Pens, which may be			
	closed or opened without changing the position of			
	the hand, or they may be straightened, so as to			
I	form a ruling pen; extremely useful for naisning			
	drawing			
I	(Compasses or Dividers, from 12 to 2 inches long,			
		li I		
	42 F — Compasses, with divided wings and screws	ļļ.		
	Drawing Boards. See Boards, Nos. 139, B and C			
	Knives  Pens of Steel	1	16	0
	for the Sliding Rest	II.		1.
	Pine PCI UOD	0	2	6
. 1	(Paper's (Professor) Instruments for drawing in (	1	1	
П	I I I I I I I I I I I I I I I I I I I		1	1
ı	Parallel Rules, various, in Boxwood, Brass, Epony,	1	[	1
ı	145 A ) and I work with divided or plain edges; either with >			
ı	single bars and rollers, or with double or triple bars	1		1
ı	Scales and Protractors, of Brass, Horn, Ivory, and	-	1	
	Wood, variously divided	-		
	(Dannie Granger's Manager's Navigation, and)			
	) warious other Scales with descriptions of them - )			
	(Triangular or Prismatic Scales, in Brass, Boxwood, 1			
	IN E and Ivory, with various divisions cut on their	>		1
	odeso French nattern	0		
	IN F Sections of Brees Roywood, and Ivory. See No. 50	0		
	1 Canada T Sanaras and straight suges, of various	-		
	lengths			
	T Squares with graduated shifting stocks,			
	for laying down angles  Set Squares, or Triangular Squares, of	7		
1	various sizes and angles, 30, 60, 45 degrees, &c.	3		
1	(WITTIE'S (RAV R.) Orthograph, a reconstruction of			
1	the nantograph giving it the greatest lacility of			
۱	motion and adapting it to irregular solius as well			
۱	l as plain surfaces, such as all objects of natural			
۱	histome machanism and WORKS OF STL. OC. "	2		
۱	A. PAMPHLET, describing the use of a Case of Drawing	}		
ı	Instruments	3 U		
۱	N.B. All descriptions of Instruments, Scales, Rules, &c. &c. for drawin	6		
۱	made to order.	TI		1
п				

13.

ı	In the Rough.	Fi	nished	t.	
	£. s. d.	£.	S.	d.	
	LATHE FRAMES, with popit heads, rests, and	5	10	0	
	putties, three-men oction	6	10	0	
3	Five-inch.	8	0	0	
4	Six-inch.	11 15	0	0	
	Cauch inch 12 0 0	19	U		
ı	These Lathe Heads may be had with Cylinder Poptt Heads, when required.				
1	CLathe Frames for heavy metal Turning, mounted \				
1	i either in the ordinary way, or in gun metal bearings,				
I	or with double conical mandrels, and steel collars, after the plan of CLEMENTS's Surface Lathe, re-			Į	
	warded by the Society of Arts. They may be had				
	with or without wheel work, &c., and with com-				
	mon or best cylinder popit heads N.B.—For slide Rests for Metal Turning, suitable to the above,				
	See No. 288 A E.				
	THE FRAMES FOR SCREW CUTTING, as follows.				
1					
	D MEASURING INSTRUMENTS, in very great variety, viz.				
	Bevils No. 14 to No. 16 A A Calliners No. 53 No. 59 A				
	Compasses No. 87 No. 96				
	Dividers No. 135 & No. 136				
-	Drawing Instruments - No. 139 to No. 145 M				
	Plumb Bobs No. 522 D Guages No. 208 No. 213 B				
1	Pocket Instruments No. 529 C				
1	Rules No. 554 No. 563				
	Spirit Levels No. 620 & No. 620 A Squares No. 623 B No. 628				
	Straight Edges No. 641				
	Tape Measures No. 643 A and B				
1	ANING BENCHES, without Tools, viz.				
-	Benches with only two side screws, one sliding bench hook, and one drawer				
1	4 feet, £4. 5 feet, £5. 6 feet, £6. 7 feet, £7.				
1	(Planing Benches, with two side screws, and one end				
	screw, and two sliding bench hooks, and one drawer 4 feet, £6. 5 feet, £7. 10s. 6 feet, £9. 7 feet, £10. 10s.				
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
	ROSE ENGINES.				
	(The Mandrel Frame, 12 inches high from center to)				
	center (	150	0		0
1	2 Capstan Springs, for the side and end Motions 2 Levers to fix the Mandrel Frame, &c. &c.				
-	The aforesaid Rose Engine, with &c. &c	200			0
1	Rose Engine with steel collar and mandrel, &c	330	(	)	0
	A variety of additional Apparatus, Nos. 546 to 553 8AWING MACHINES.				
	(A Sawing Machine, 5-inch center, with beech frame,)				
	rising platform of iron	18		)	0
	Guide for preventing the deviation of the saw, &c.				
	Various other Sawing Machines, Nos. 579 to 581 C	H	-		

## HOLTZAPFFEL & Co.

Nº 64, CHARING CROSS.

OPPOSITE TRAFALGAR SQUARE, LOND.

MANUFACTURERS OF

# ENGINES, LATHES, MECHANICAL AND EDGE TOOLS

(To the Monourable Board of Ordnance, and the East India Company.

Cuttery in great Variety.

DEALERS IN

FOREIGN HARD WOOD, IVORY, AND OTHER MATERIAL

FOR HOME CONSUMPTION, AND FOR EXPORTATION.

#### Tools and Unstruments for

ARCHITECTS.
BOOK BINDERS.
BRAZIFRS.
BRUSHMAKERS.
BUILDERS.
CABINETMAKERS.
CARPENTERS.
CARVERS.
CLOCKMAKERS.
COACHMAKERS.
COPPERSMITHS.
ENGINEERS.
ENGINEERS.

GARDENERS,
GUNMAKERS.
HARNESSMAKERS.
HATTERS.
JEWELLERS.
MACHINISTS,
MASONS,
MILLWRIGHTS,
MODELLERS,
OPTICIANS.
PAINTERS,
PLASTERERS,

PRINTERS.
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SURVEYORS.
TINSMITHS.
TURNERS.
WATCHMAKERS
WHRELWRIGHTS.
WIREDRAWERS.

Plantation Amplements of every westriptica.

All Kinds of Turning, Framing, and Smiths' Work, for Ornamental, Useful, or Experimental Purposes, made to Drawings or Models.

PLUMBERS.

ENTRANCES TO THE MANUFACTORY,

 $N^{\circ}$  127, Long Acre; and  $N^{\circ}$  3, Chapel Court.

## HOLTZAPFFEL & Co.,

No. 64,

GRARING CROSS, LONDON,

## GINE, LATHE, & TOOL MANUFACTURERS,

AND

#### GENERAL MACHINISTS,

to the You. Board of Ordnance, the Hon. Gast India Company, &c., &c.

TURNING, PLANING, SCREW AND WHEEL CUTTING, FRAMING, &c.
IN METAL AND WOOD TO DRAWINGS OR MODELS.

#### Amateurs

ARE SUPPLIED WITH THE APPARATUS, TOOLS, AND MATERIALS, THAT ARE REQUIRED IN TURNING AND THE MECHANICAL ARTS GENERALLY, AND ARE ALSO PRACTICALLY INSTRUCTED IN THEIR USE.

#### Tools and Unstruments for

ARCHITECTS.
500KBINDERS.
BRUSHMAKERS.
BUILDERS.
CABPENTERS.
CARPENTERS.
CARVERS.
CLOCKMAKERS.

COPPERSMITHS.
ENGINEERS.
ENGRAVERS.
GARDENERS.
GUNMAKERS.
HARNESSMAKERS.
HATTERS.
JEWELLERS.
MACHINISTS.

MASONS.
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MODELLERS.
OPTICIANS.
PAINTERS.
PLASTERERS.
PLUMBERS.
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SEAL ENGRAVERS.
SILVERSMITHS.
SMITHS.
SURVEYORS.
TINSMITHS.
TURNERS.
WATCHMAKERS.
WHEELWBIGHTS.
WIREDRAWERS.

#### Cuttern of every Wescription.

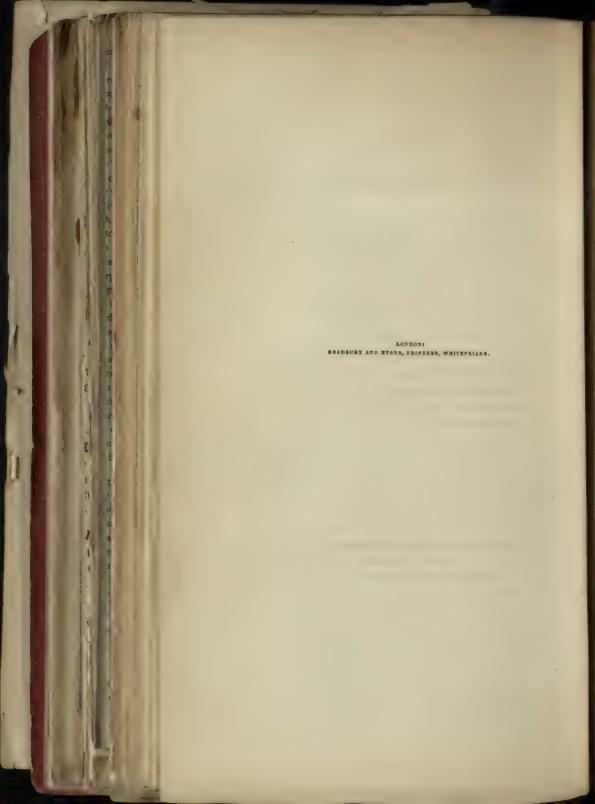
#### AN EXTENSIVE ASSORTMENT OF

TOOL CHESTS, DRESSING CASES, DRAWING AND MEASURING INSTRUMENTS, PRINTING PRESSES, GARDEN TOOLS, &c.

#### MANUFACTORY, 127, LONG ACRE.

foreign orders, received either direct or through agency houses, executed with exactness and dispatch.

STEREOTYPE IMPRESSION. PRICE SIXPENCE. 1851.



#### ADVERTISEMENT.

HOLIZAPPEEL & Co., in presenting to the public their new and enlarged Catalogue, feel it to be their first duty, to return their set grateful thanks to their numerous and distinguished Customers, of the kind support their house has experienced during a period high, at this present time, extends to half a century, the business aving been established in 1794.

A printed Catalogue was first issued by H. & Co. about thirty ars back—the second impression of this Catalogue was greatly larged, the articles were then arranged alphabetically, and numred from 1 to 740—and in three successive reprints, many additions re made to their earlier Catalogues, so as to include the more portant of the mechanical tools, and turning machinery, known the respective periods. In order to retain the usefulness of every pression, the introductions were in each case distinguished by tters attached to the original numbers, as 330 A, 330 B, &c.; so at, a reference to the number and letter in any of the copies, curately distinguished the particular article alluded to. Certain onveniences were, however, found to be inseparable from this thempt, strictly to maintain an alphabetical and numerical scheme. The difficulties of distinct and perspicuous arrangement, contially increased with every introduction of new articles; and as any such had now to be inserted, it was considered desirable, in a new epoch to commence a new Catalogue, in which, although principal arrangement is alphabetical, the subsidiary parts are ssified in a manner denoted by the several headings introduced dalics. The descriptions are also given more at length, and are respersed with numerous explanatory notes, which it is hoped be found useful.

1

To avoid interfering with the usefulness of the old Catalogues, the

present carries a new series of numbers, commencing at 1000, and ending at 2078, so that confusion with the old numbers cannot possibly occur; and to avoid the prospective inconvenience, of the breaking up of this present series of numbers by future addition to the list, it is intended, as occasion may require, to publish supplements; the first of which will be commenced with the number next following, or 2079.

The prices of the several articles are partially annexed in two columns, the lowest and highest of the ordinary prices being a general quoted. When only one price appears, it is meant to express that only one article of that particular description is a present made. It is to be further observed, that the desire introduce prices, so far as possible, has induced H. & Co. to attack some few of them rather from surmise than experience; and, consequently, a little latitude may occasionally be required.

It is a matter of some regret to Holtzapffel & Co. that the could not entirely fill out the columns with prices; but they have found, from long experience, that, in numerous cases, the first prices have acted with inconvenience; because the articles to what they referred were, in many instances, more or less open to change of construction, which changes necessarily influenced their cost, and, therefore, the obvious tendency of such fixed prices was to cripple the emendation of the several articles so particularised. These remarks apply more particularly to the Lathe Apparatus described on pages 35 to 44.

So far as possible to remedy this inconvenience, H. & Co. will be happy to supply, on application, the prices of any of the article specified, agreeably to the several constructions at the time of the inquiry; and they will be also happy to furnish any additional explanations that the Catalogue may not be found to convey.

In selecting those parts of their stock which they do not manufacture, H. & Co. employ the utmost care to obtain none to those which are of the very best workmanship; and in the existive portion of the stock, the work of their own manufactory. The aim at combining the advantages of their former experience, the adoption of every improvement, in the application of machiner to manufactures, likely to insure or to increase accuracy of result.

#### ADDRESS.

It is a source of extreme gratification to H. & Co., to notice the stent to which the Mechanical Arts, and more particularly that of Turnz, are pursued; the Turning Lathe, in its various modifications, assisted vits appendages of mechanism, being at present absolutely essential to ome stage of every manufacture.

The cultivation of Mechanics by Gentlemen who have the advantages general acquirements and of leisure, has given rise to many ideas and agestions on their part, which have led to valuable practical improveents. H. & Co. have a large share of these obligations to acknowelge, but it would obviously be extremely difficult to particularise them, the ultimate form of any successful piece of mechanism is commonly be result of many successive modifications.

In some cases H. & Co. have been furnished by Gentlemen with the coretical and general sketch of machines, the details of construction sing entrusted partially, or wholly, to themselves; and in others they have prely carried into practical effect the finished designs.

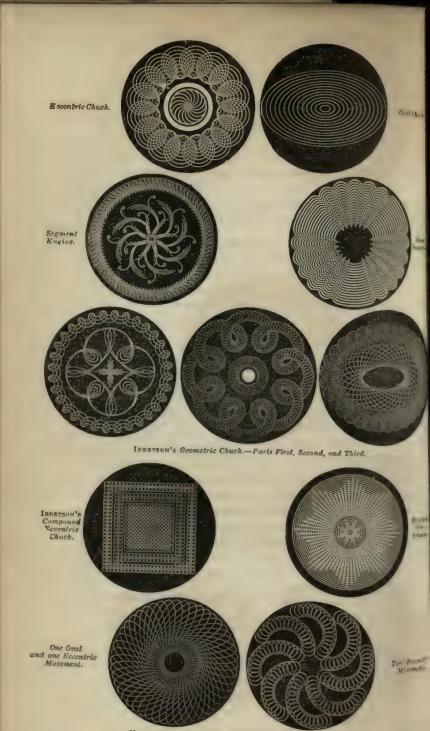
To each of the Gentlemen by whom they have been favoured with mmunications, as well as to those whose names appear in this Catalogue, by beg to return their most sincere thanks, with the assurance that it ould give them great pleasure to make further additions to this list under similar circumstances.

The public is respectfully invited to inspect H. & Co.'s ware-rooms, where may be seen the principal part of the tools and machines specified this list; but of these numerous apparatus, some few are only made to relet, and others cannot be always in readiness; consequently, drawings the whole are in preparation, to supply this inevitable deficiency. The drawings are often found to assist foreign Gentlemen, and others, who experience inconvenience from being unacquainted with the technical sames of the various apparatus.

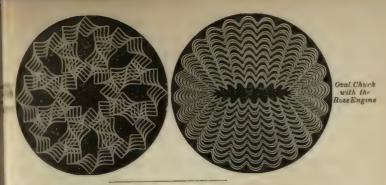
Amateurs wno desire to receive instruction in Turning or Mechanical Manipulation generally, can receive lessons from H. & Co.'s experienced workmen, either in rooms fitted up for the purpose at Charing Cross, or

at their private residences, in town or country.

No. 64, CHARING CROSS, October, 1844.



HOLTEAPPPET & Co.'s Compound Oval and Eccentric Chuck.



Fuch Specimen on the other side is the result of a different Apparatus.
This page shows the effect of the same Apparatus, when employed in conjunction with the Rose Engine.
Although only one Specimen of each individual Apparatus is given, yet the terms, which may be considered almost endless, depend on the skill and taste the Operator.



Geometric Chuck combined with the Rose Engine



Straight Line Chuck combined with the Rose Engine.



One Oval and one Eccentric Movement.

HOLTZAPPPEL & Co.'s Compound Oval and Eccentric Chuck with the Rose Engine.

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TO

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WOODS	2076	2078	
TARLE UNIVES AND PODUS			A
TABLE KNIVES AND FORKS, &c ENGINE DIVIDED SCALES			
			C
COWPER'S PARLOUR PRINTING PRESS	s, &c		D.
TURNING AND MECHANICAL MANIPUL	ATION -		

## GENERAL CATALOGUE

OF

## Lathes, Machines, Kustruments, & Tools,

MANUFACTURED AND SOLD BY

#### HOLTZAPFFEL AND CO.,

64, CHARING CROSS, AND 127, LONG ACRE, LONDON.

#### REVISED AND ENLARGED, 1844.

		F	rom	-1		To	
		£	8.	d.	£	8.	d.
	rone - Pach	0			0		0
-	ADZES. Carpenters, Coopers, and Shipwrights adzes Each	U	-	٧	0	•	
101	AVVII.S Small annile of the Ordnance nations, with shalks ivi				_	10	0
	the banch on wice a corne with 9 outtors a s s s Cutt	U	13	- 1	0		0
1	Smiths anvils, from 20 to 400 lbs. weight The lb.	0	1	0	0	0	6
-	Smiths anvits, from 20 to 400 tos. Wight						
3	- Smiths anvils, with complete sets of Forging Tools, or com-	A	0	O.	14	0	0
	plete sets of Farriers' Tools The set	0		- 1			_
106	Twined anyil stands of east iron with appings to reduce the		3.0	0	0	10	0
	concussion erising from the hammer Each	2	10	U	3	10	
105	AUGERS. Shell augers, from \$ to 1\frac{1}{2} inch, short with tangs	0	0	7	0	1	9
10.0	— Shell augers, long, with eyes	0	0	9	0	3	0
m2	oden augers, long, with eyes	0	1	6	0	- li	6
han	Screw augers	1					
*	Improved American screw augers, from 1 to 2 inch, with	0	2	0	0	6	0
	worms soldered on, and shifting cutters Each	U	2	0	v	0	
	- Somew and Shall aurore in gets of b to 12, and it our s	1					
	light diameter, to fit handles of beech-wood or hard	1					
	wood, with spring sockets The se	1	7	, 0	. 1	18	0
	The dozen	0	0	8	0	1	0
	AWLS. Brad, flooring, and saddlers awls The dozen	10	2	6	0	6	0
	- Brad-awls in beech-wood or hard-wood handles.	.   '	~		1	•	-
	Brad awle gots of 6 to 19 contained in socket handles of			^	1 0	24	6
	hown hand   0 =   100 80	1111	4	6	0	1	0
	AXES. Bench, blocking, broad, falling, hedge, ship, wedge, and	1			1		
			1	0	0	2	6
1	wheelers' axes. Handles charged extra				-		
	ralling axes of American pattern, and variously handled	10	10	0	0	16	- 0
и	H. and Co.'s make		20		1	-	
	Single hand area similar to the lest but smaller; used to		8	0	0	10	0
١.	felling small trees, and for trimming plantations - Each	10	0	U	' '	IO	V
	BABBAGE'S (C., Esq.), cutter bars, for turning metal, with th	е					
ш	slide most (Car No 1000)						
I	BAKEWELL See No. 1622.)	e			-		
	BAKEWELL'S angle meter, for geological purposes. (Se	1 2	2	(	1 2	12	6
	No. 1399.)	-10			) (	9	0
	Bakewell's Geological Hammer. (See No. 1397.)	-10		,	,	, 9	

	T	rom	T		-
No.	£	8. (	1.	£	G .
1019 BEAK IRONS of various forms and sizes, for the tail-vice, the		0. 0		~ :	
work bench, or for wooden blocks Each	0	2	6	11	0
work bench, or for wooden blocks Each 1020 BED WRENCHES of common construction	0	1		1)	j
1021 with shifting sockets of different sizes	Õ		6		ш
1021 — with shifting sockets of different sizes — in the form of a cross, with 3 square sockets,		•	1	19	47
and 1 screw-driver Each	0	5	a	()	
1023 BENCHES of beech-wood and mahogany, made to order, with or		U	U	(1	0
without complete sets of tools, such as are used by cabinet-					
makers, carvers, clock-makers, dentists, jewellers, joiners,					
emiths watch realisms and other entirens (See also					
smiths, watch-makers, and other artizans.—(See also Planing Benches, Nos. 1715 to 1719.)					
Flaming Denenes, Nos. 1715 to 1719.)	1				_
1024 BEVILS for joiners and others.	0	,	6	0	
1025 Joiners' bevils, with plain joints, 6 to 12 inch Each	U	1	6	0	4
1026 — similar but plated with mortised blades	U	2	6	6	9
		2	6	0	3
1028 — Quarm's bevilling instrument for joiners; rewarded by the					
Society of Arts in 1843.	1				
1029 — Bevils of various kinds, made entirely of metal, and gene-					
rally without graduations Each  Bevils, with sliding blades and graduations, for the turner and general mechanist Each	0	4	0	0	12
1030 — Bevils, with sliding blades and graduations, for the turner	2				
and general mechanist Each	1			1	0
1031 —— Set bevils, with graduations, for setting the sliding-res	t				
obliquely for turning cones Eacl	1			1	0
1032 BLASTING TOOLS, for blasting the roots of trees, &c. namely					
a screw auger, a perforated screw plug, gun-meta	l;				
tamping bar, (serving also as the wrench,) quick and	1				
slow matches, and pricker; all contained in a strong	,				
deal case, painted The se	8			2	12
1033 BLOWPIPES, of brass, 6 to 15 inches long, of the ordinary kind					
formed as conical tubes Eacl	0	1	0	0	2
1034 — Blowpipes of other kinds, with different jets or nozzles to					
screw on, and with reservoirs to collect the moisture					
from the breath Each	0	5	0	0	16
1035 — Blowpipe-lamps, for spirits of wine, oil, or tallow	10	2	6	0	30
1036 — Blowpipe-tables, with circular and other bellows, to be		_			
worked by the foot; for soldering, glass-blowing, and	2				
various small applications of heat Each	4	10	0	6	()
(See also the Forge, No. 1371.)	-	10	-		
1037 —— Sir John Robison's workshop or howitzer blowpipe, for em					
ploving a mixed strong of common six and analysis the	1				
ploying a mixed stream of common air and carburettee	A				
hydrogen, or the ordinary street gas. The blowpipe is	3				
supplied with or without the flexible tubes, and pedesta	1				
or frame-work. Described in the "Mechanic's Maga	0	0	0	4	U
zine," for 1842, vol. 36, page 258 Each	12	U	0		
1038 BOOKBINDERS' TOOLS. The sewing press, cutting press					
plough, cutting boards, backing boards, and the principa	Ī				
tools used in bookbinding, supplied either separately, or	3				
conveniently arranged in the same case that serves as the	3				
shaving-tub.					
1039 — Bookbinders' stamps in brass or steel, with letters, figures	9				
names, cyphers, ornaments, &c., to order.	1				
1040 BORING BITS for the lathe.					
1041 Cylinder bits, with or without handles, in sets of 8, below	7				
inch diam., and from 6 to 10 inches long, for boring	5		-	0	10
small tubes, smoking-pipes, &c	10	7	6	0	In
1042 — Cylinder bits, in hard-wood handles with brass centers, in					10
sets of 12, from 4 to 4 inch diameter The se	2			1	10
1043 — Cylinder bits, made entirely of steel; namely :-					0
1044 — Set of 12, from to to diam., 4 to 7 long				1	3
1045 — 12, — 1 to 3 — 6 to 9					18
1045 — 12, — 12, — 14 to 14 — 7 to 12 — —				2	10
700 12	1				

-		_		-			_
10	nia niaci		From	,	0	To	
BOI	RING BITS continued.	بد	8. 0	t.			d.
1047 -	Sets of 4, from 11 to 12 inch diam., 12 to 15 long The set				2	4	U
	Any of the above cylinder bits, which constitute a			Į			
	complete series, may be had separately.			-			
1048 -				1			
	howitzers, and mortars, on reduced scales. The set of						
	boring tools consists of 2 long piercing and re-centering						
	drills; 2 long boring bars, with one shifting cutter and						
	guide for every calibre; I bar, with a cutter of the			-1			
	curvature required in every chamber; and adjustable			- }			
	cutters for rounding the trunnions. The whole or any						
	part of the entire series made to order, and of the par-						
	ticular scale desired.	1					
1049				-1			
1010	and other boring tools for the lathe, made to order						
1050	BRACES AND BITS of various kinds.	ĺ		1			
1091	Braces of beech-wood, with 12, 18, 24, 36, 42, and 48 bits,		10	0		15	0
1050	left black from the hardening The set	U	10	0	1	15	U
1052	- Braces of beech-wood, with brass plates on the sides, and		10	0	^		
1019	with 12 to 48 bright or straw-coloured bits The set	U	19	0	2	5	U
1053			7.0	0	_	2.0	-
100	to 48 bright or straw-coloured bits The set	1	10	0	2	10	0
1054	— Braces of wood, smaller than usual, with and without bits,						
	for pianoforte makers and others Each	0	9	0	0	15	0
1055	— Braces of iron, with 12 to 36 bright bits, for joiners'						
_	Braces of iron, with 12 to 36 bright bits, for joiners' work, and general purposes The set	1		0	1	10	0
56	- Braces of iron, for gun-makers, smiths, and others. Each	0	10	0	2	10	0
	The bits, drills, countersinks and cherries for the latter, are						
	charged extra.						
057	BRACE BITS of various kinds for joiners.	1		- 1			
lus8	Center bits from 1 to 2 inch	0	0	5	0	1	2
1039	Center bits from \$ to 2 inch		_			_	
	3 tools, that serve for holes of every diameter between						
	inch and O inches Downwood by the Society of Arts						
	inch and 2 inches. Rewarded by the Society of Arts.	0	4	6	0	7	6
1950	1844 The set		T	U	U	,	v
	Expanding center bit, with bar and cutter, for cutting	0	10		۸	15	0
1001	holes and disks in thin wood, from 2 to 8 in. diam. Each		10	0		15	0
1062	Countersink for metal and wood	· U	U	6	0	1	0
1.00	riuted bits of many kinds, known as shell, spoon, and						
	gouge bits; and also as brush, chair, dowelling, sash	,		_			
IAAq	and table bits Each	0	0	5	0	1	6
11951	Nose bits or auger bits, under 6 inches long	0	0	5	0	0	9
1 42	Nose bits, from 7 to 18 inches long	0	1	0,	0	2	0
1050	and table bits  Nose bits or auger bits, under 6 inches long  Nose bits, from 7 to 18 inches long  Screw auger bits  Taper bits or rimers; half round, or with three, four, and five sides, for metal; and fluted rimers for wood  Each	0	1	6	0	2	6
1,00	Taper bits or rimers; half round, or with three, four, and	l'					
	five sides, for metal; and fluted rimers for wood - Each	0	0	5	0	1	0
1000	Trans. 2. 114.	0	0	6	0	1	0
	BRAD PUNCHES, round and square, black and bright	0	0	2	0	0	4
-	BRAND MARKS, with names, single letters, or devices, to order BRASS, cast to patterns						
1000	BRASS, cast to patterns  The lb  REAST PLATES:						
1457	BREAST DI ANDS:	. 0	1	2	0	2	6
2	BROACHES. Clock and watch-makers' polygonal, cylindrica.	1					
	and nivot broaches	0	0	2	0	1	6
13	and pivot broaches Each Broaches from 14 to 12 inches long BRUNEL'S tube compasses. (See No. 1258.)	10	0	2	0	6	ő
74	BRUNEL'S tube compagned (See No. 1259)	. i	5	0		15	0
15	BRUSHES. Straight brushes, for polishing ivory, metals, &c. Each Circular or wheel brushes, 2 to 6 inches diameter Circular brushes, with the bristles on the flat face of the	0	1	6	0	3	0
19	Straight brusnes, for polishing ivory, metals, &c. Each	0	0	0	0	4	6
177	Circular or wheel prushes, 2 to 6 inches diameter	10	U	2	U	-2	U
	Circular or wheel brushes, 2 to 6 inches diameter - Circular brushes, with the bristles on the flat face of the disk for lanidary work	10	7.4	0	7	4	0
- 4	The state of the s	U	14	0	1	4	0
-3	Scratch brushes of brass or steel, for cleaning files Each	U	2	0	0	4	6
			-			-	^
	carding or combing cotton wool, fixed on wooden handles	U	2	0)	0	3	U
	c 2						

060 BURNISHERS various, for engravers, watch-makers, and others, either with wooden handles or double-ended, Each 0 1 0 0 2 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				_	-		
080 BURNISHERS   various   for engravers   watch-makers   and others, either with wooden handles or double-ended,   Each   0   0   0   0   0   0   0   0   0			F				To
1081 BUFF STICKS for polishing	No.		£	8.	d.	£	I.
1081 BUFF STICKS for polishing	1080	BURNISHERS various, for engravers, watch-makers, and			1		
1082 CALLIPERS of various kinds.		others, either with wooden handles or double-ended, Each	0	1	0	0	2
1082 CALLIPERS of various kinds.	1081			0	4	0	1
(A.—Country made Callipers, for Joiners.)    1083 — Plain callipers, 5 to 12 inch, black		, 1			,		
(A.—Country made Callipers, for Joiners.)    1083 — Plain callipers, 5 to 12 inch, black		CATTIDEDO &	1				
1083	1085	CALLIPERS of various kings.					
1083		A Country made Calliners, for Joiners			}		
1086		(A.—Country made Campers, jor boners.)					
1086							
1086	1083	—— Plain callipers, 5 to 12 inch, black The pair	0		6	0	5
1086	1084		- ()	2	0	0	7
1086	1085	- Wing callipers - black	-10	2			
(B.—Callipers of H. and Co.'s make, for General Purposes.)  1089 — Single callipers of steel, with brass joints, 3 to 9 inch The pair 0 5 0 0 12 1090 — Double, or in and outside callipers	1086	bright	0	9		0	ų.
(B.—Callipers of H. and Co.'s make, for General Purposes.)  1089 — Single callipers of steel, with brass joints, 3 to 9 inch The pair 0 5 0 0 12 1090 — Double, or in and outside callipers	1087	Spring calliners black					
(B.—Callipers of H. and Co.'s make, for General Purposes.)  1089 — Single callipers of steel, with brass joints, 3 to 9 inch The pair 0 5 0 0 12 1090 — Double, or in and outside callipers	1000	hright					
1089	1000	Dirgito	U	4	6.	U	J
1089		(D C 711 6 77 1 C	1				
1091 — Double, or in and outside callipers		(B.—Campers of H. and Co.'s make, for General Purposes.	)				
1091 — Double, or in and outside callipers							
1094	1089	Single callipers of steel, with brass joints, 3 to 9 inch The pair	0	5			
1094	1090	— Double, or in and outside callipers — — —	-0	6	0	0	11
1094	1091	— Double callipers, with fixing screws	-10	8	0	()	14
1094	1092	— Double-side callipers — — — — —	-10	8	0	6]	1,
1094	1093	Proportional calliners, with fixed or shifting axes for	12	-			
1098	2.00	machanical drawing and for coulature (See No. 1973	10	10	0		1
1098	1004	Colliners with wide ands for severe	10	10			17
1098	1005	Calliner cases (See Cases No. 1200)	-10	- 6	U	1 61	-
1098	1099	CAD DESIGNATION COMPANIES.			^	13	0
1098	1090	UARPET STRAINERS Each	10	2			
1099   CATGUT for drill-bows, lathes, and machinery; of sizes not exceeding one quarter inch diameter   The hank   0 0 2 0 5	1097	CARVING TOOLS, Addis's and others in great variety —	-[0]	U	6	U	1
1099   CATGUT for drill-bows, lathes, and machinery; of sizes not exceeding one quarter inch diameter   The hank   0 0 2 0 5	1098	in sets of 12 to 30	5				
1099   CATGUT for drill-bows, lathes, and machinery; of sizes not exceeding one quarter inch diameter   The hank   0 0 2 0 5		tools, ground and handled The set	0	15	0	2	10
Catgut from one quarter inch diameter	1099	CATGUT for drill-bows, lathes, and machinery; of sizes no	t				
1100 — Catgut from one quarter to one inch diameter, to order   1101 CEMENT for turners		exceeding one quarter inch diameter The hand	0	0	2	0	5
1101 CEMENT for turners	1100	Catout from one quarter to one inch diameter to order	. 1				
Sheet-metal, &c. (See No. 1392.)	1101	CEMENT for turners				0	1
Sheet-metal, &c. (See No. 1392.)	1102	Dismond coment for ivery	-			0	3
Sheet-metal, &c. (See No. 1392.)	1102	CHATK I INES with an without wal-	F 0	0	0	6	1
Sheet-metal, &c. (See No. 1392.)	1103	CHARED AND HARMADES	3 0	U	2	V	
1105 CHESTERMAN spring tape measures	1104	CHAILER AND HAIWARD'S micrometer gage for glass	2			1 4	5
1105 CHESTERMAN spring tape measures	210"	Sheet-metal, &c.—(See No. 1392.) Each	5			1	10
1107 CHISELS. Firmer chisels, of cast steel, \frac{1}{18} to \frac{2}{1} \text{ inch } - Each \ 0 \ 0 \ 1108 \  - Firmer chisels, in sets of 12, from \frac{1}{18} to \frac{1}{18} \text{ inch } - The set \ 1109 \  - The above set handled in beech-wood \ 1111 \ - Coach-makers' chisels of cast steel, \frac{1}{4} to \frac{2}{1} \text{ inch } s \text{ who dod } \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \	1105	CHESTERMAN'S spring tape measures.—(See No. 1653.) ——	-10		0	1	
1107 CHISELS. Firmer chisels, of east steel, \frac{1}{8} to 2\frac{1}{2} inch - Each 0 0 4 0 1 108 - Firmer chisels, in sets of 12, from \frac{1}{16} to 1 inch - The set 109 - The above set handled in beech-wood 1110 - The above set handled in hard wood 1111 - Coach-makers' chisels of cast steel, \frac{1}{4} to 2 inches wide, and thick; without handles - Each 0 0 6 0 1 112 - Paring chisels, longer and thinner than firmer chisels, \frac{1}{2} to 3 inch - Each 0 0 6 0 1 113 - Millwrights' chisels, longer and thicker than firmer chisels, \frac{1}{2} to 3 inch - Each 0 0 6 0 1 114 - Socket chisels, \frac{1}{8} to \frac{2}{4} inch - Each 0 0 6 0 1 1 0 0 1 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 1	1106	CHESTERMAN and Bottom's notant wine towns (C. M. 1050	10	10	0	1	[1]
1112	1107	CHISELS. Firmer chisels, of cast steel, 1 to 21 inch Each	0 6	0	4		
1112	1108	- Firmer chisels, in sets of 12, from 1 to 1 inch - The se	1				
1112	1109	The above set handled in heech wood	d				
1112	1110	The above set handled in hard wood	1			0	12
thick; without handles	1111	- Coach-makers' chisels of cast steel. 1 to 2 inches wide and	3				
1112		thick without handles	- la	0	6	10	5
1114 — Socket chisels, § to 2½ inch	1119	Paring chicals language and thinner than Constant land	17		-		
1114 — Socket chisels, § to 2½ inch	1112	2 inch consens, tonger and tinuner than firmer chisels, 3	1	0	C	0	3
1114 — Socket chisels, § to 2½ inch	3110	Mill-wi-ht-2 his-i- i and a second second	110	U	U	1	
1114 — Socket chisels, § to 2½ inch	1119	miliwrights chisels, longer and thicker than firmer chisels	2			. 0	1
1119 — Short bent chisels, or bolt chisels, for small locks	111	o to o inen	10		0	0	
1119 — Short bent chisels, or bolt chisels, for small locks	1114	Socket chisels, § to 21 inch	-0	-	1	U	2
1119 — Short bent chisels, or bolt chisels, for small locks	1115	- Mortise chisels, 18 to 4 inch	-0	1	0		
1119 — Short bent chisels, or bolt chisels, for small locks	1116	set of 8, without handles The se	10	8	€		
1119 — Short bent chisels, or bolt chisels, for small locks	1117	set of 8, handled in beech-wood	1				
1122 CHUCKS FOR LATHES.—(See Chucks for Fixing Works and	1118	- Long bent chisels, for letting in mortise locks	0	2			
1122 CHUCKS FOR LATHES.—(See Chucks for Fixing Works and	1119	- Short bent chisels, or bolt chisels, for small looks	0	0	6	0	1
1122 CHUCKS FOR LATHES.—(See Chucks for Fixing Works and	1120	Turners' chisels for wood 1 to 21 inch	0	0	5	0	3
1122 CHUCKS FOR LATHES.—(See Chucks for Fixing Works and	1191	Smithal chinning and gross suffice all 1	U	0	-		
1122 CHUCKS FOR LATHES.—(See Chucks for Fixing Works and	1141	inches chipping and cross-cutting chisels for metal, 2 to	10	0	6	0	3
1122 UHUUKS FUK LATHES (See Chileks for Riving Works and				0	0	-	
Chucks for Ornamenting Works, pages 36 to 40.) 1123 CLAMPS FOR VICES.—(See Vice Clamps, Nos. 2051 to 2054.)	1122	UHUUKS FUR LATHES (See Chucks for Riving Works on	i i			-	
1123 CLAMPS FOR VICES.—(See Vice Clamps, Nos. 2051 to 2054.)		Chucks for Ornamenting Works, pages 36 to 40.)	1				
	1123	CLAMPS FOR VICES.—(See Vice Clamps, Nos. 2051 to 2054.)					

,		Fron			To		
	£	S.	d.	£	8.	d.	
CLEMENT'S Double self-acting driver chuck.—(See No. 1546.)			1				
CLEMENTS Double Sent found describing allinger (See Drawing			- 1				
1125 — Clement's Instrument for describing ellipses.—(See Drawing			- i				
Instruments, No. 1280.) Il26 COACH WRENCHES.—(See Screw Wrenches, Nos. 1860 to							
use COACH WRENCHES (See Screw Wrenches, Nos. 1860 to	1						
		3	6	1	12	0	
1127 COLLARS AND MANDRELS, to be mounted in wooden head-						_	
1127 COLLARS AND MANDRELS, to be mounted in wooden nead-		-					
stocks - (See No 1519.)		7	0	4	8	0	
		0	6	0	1	0	
Plain compagage black	0	1	6	0	2	6	
128 COMPASSES. Iron-joint compasses, 5 to 12 inch - The pair     129	0	1	9	0		0	
1130 —	0	0	0				
1131 — Wing compasses — black —	U	2	U	0		9	
bright	0	2	3	0		0	
Rock compasses — black —	0	2	6	0	6	0	
hnight	0	3	6	0	7	0	
1134	ľ		1	v			
with a large cone center, for making circles around	1						
central holes The pair	U	3	6	0	6	6	
1136 — Bullet or cone compasses, as above, with shifting cutters,	1						
Dullet or come compasses, as above, with similar cutters,	0	7	0	0	12	0	
for cutting out plates of metal, &c Each	V	-	0	0	14	U	
for cutting out plates of metal, &c Each 1137 — Cutting compasses, of brass and steel, for pasteboard, with							
a joint to place the knife perpendicularly 1 he pair	U	15	0	1	5	0	
108 — Cutting compasses, for cutting out the leather washers for							
Cutting compasses, for cutting out the leather water	0	10	0	1	10	0	
axletrees, and other purposes The pair	10	10	V		10		
1139 — Beam compasses, of steel, with one shifting slider; the end	l)						
of the beam made into an adjusting point, as in spring	41						
dividers Each	0	15	0	1	0	0	
Gividers							
1140 — Drawing compasses of numerous kinds.—(See Drawing	,						
Instruments, Nos. 1246 to 1276.)		-					
141 CORKSCREWS, various — (See Cutlery, Nos. 1208 and 1209.)	0	1	0	1	0	0	
1142 COWPER'S Parlour Printing Press, &c., fully described at the	3						
end of this Catalogue.—(See Appendix B, page 69.)							
end of this Catalogue.— (See Appendix D, page 03.)							
1143 — Cowper's Trammel, for drawing ovals. — (See No. 1278.)							
1144 CRAMPS. Short or bent cramps, of iron, from 4 to 30 inches	8						
long with gauge thread screws; used by joiners and							
various other artizans Eacl	BU	5	6	1	10	0	
Long or straight cramps, of iron, from 3 to 6 feet long, with	0						
Long or straight cramps, or from 5 to 6 feet long, was	2 1	0	0	2	10	0	
screws and shifting heads and pins Each	6 4	V	V	-	10		
Nicholla's improved cramps with double bars, for joiners	9						
rewarded by the Society of Arts, 1844 Each	1.1	10	()	3	10	0	
1147 CRIMPING MACHINES, or gauffering machines	-11	4	0	2	8	0	
11 R CDOW IDONG & POR A 15 in short land	0	1		0			
18 CROW IRONS of different qualities, 5 to 15 inches long	1	-	0		-	-	
49 CRUCIBLES. Blacklead, Hessian, Wedgewood, and other crucibles.—(See also Furnaces, Nos. 1371 to 1375) - Eac.	2 0	^		10			
cibles.—(See also Furnaces, Nos. 1371 to 1375) - Eac.	B,U	0					
CURVOGRAPH.—(See Drawing Instruments, No. 1285.) Euc.	12	2	0	4	4	f ()	
Octo Drawing Amor Amor Amor Amor Amor Amor Amor Amor							
3100							
1151 CUTLERY of all the usual kinds; namely:—							
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1			
(A.—Knives of many Kinds and Patterns.)							
	1						
Bread Knives, with long and stout blades, in ivory or star	7-			1			
bread Knives, with long and stout blades, in 1701y of Story	2.6		[ (	) (	10	0 0	ı
		. 7					
Hudding Knives in ivony handles straight or clasped Each	m . U	) 2		) (	) ;	3 6	
Carving Kinves and Forks, or various bizes and parecising	F 80.40						
		12	1 (	) ]		2 0	
Looks Knives 4 to 10 inches long in changing handles E.C.	:/A L		3 (	) (	) ;	7 6	ı
Cooks' Knives 4 to 12 inches long, in ebony handles Each	10	) 3					
1 1984 Knives in straight handles of wood or WOTV -	_	, 1	. (	) (	3 1	2 6	١
Desk Knives with class handles and paper-loiders,	LLL I						
ivory, tortoise-shell, or pearl-shell	h (	) 6	6 (	0 1	11	D 0	ı
and the state of t							

b

	-					
No.		From		1.	To	
CUTLERY continued—Knives.  1159 —— Erasing Knives, in straight handles	0		6	0	3	1
1160 - Fishermen's Knives. Walton's fishing knife, with various in-						
struments, including scissors and vice, for making flies Each	1	-0	0	1	10	0
1161 — Fishermen's roll-up leather pouches, containing a Walton's knife, a file and rasp, an ivory one foot rule, one pair of	l		1			
knife, a file and rasp, an ivory one foot rule, one pair of scissors with fine points, a needle, and two pairs of			1			
tweezers The set	11	10	0	2	0	0
1162 — Foresters' Knives, with timber scribers and tape measures,						
for taking the girt of trees Each	10	15	U	1	10	0
1163 — Hunting Knives, with few or many instruments. Some with eyes and swivels, by which they are suspended from						
a guard-chain	0	10	0	5	0	1
a guard-chain  1164 — Hunting Knives of the Scottish pattern, known as the				ø		۱
"Skean Dhu," used for killing deer; made with and with-	1		0	4	1.0	
out guards and sheaths Each 1165 — Masticating Knives of various descriptions; the blades of	U	10	0	U	15	
some of these are capable of being separated for the con-						
venience of cleaning them	10	12	0	1	5	0
1166 - Ovster Knives, in stag-horn or ivory handles; some with			-			A
guards Each	ŊΟ	1	6	0	4	U
1167 — Penknives of every variety, in wood, buffalo-horn, stag- horn, ivory, or pearl-shell handles Each	0	1	0	0	14	0
1168 — Penknives, containing a Mordan's ever-pointed pencil, and a			1	1		
paper-folder, in stag-horn, ivory, or pearl handles Each	0	5	0	1	1	-
1169 — Pocket Knives of every variety, in stag-horn, wood, ivory,	9			,	0	٨
or pearl-shell handles Each	0	1	6	1	U	V
1170 — Pruning Knives of all kinds, with handles of buffalo-horn stag-horn, ivory, &c., either straight or clasped - Each	0	2	0	0	10	1
1171 — Sportsmen's Knives of all the improved patterns, including	1			ĺ		
the Berkeley-hunt, Norfolk, Richmond, Rutland, Vernon	,		1			A
Wellington, and Wharncliffe sporting knives Each	20	10	0	3	0	1
1172 — Traveller's knife, fork, spoon, and corkscrew, with class	)		ø	ø		
handles; either united together by sliding pins, or with separate handles of ivory or pearl-shell, and contained in			P			
leather cases for the pocket The se	10	15	0	2	0	0
1173 — Table Knives and Forks, with horn and wood handles, or	f				1	
twelve different qualities The dozen pairs	8 0	5	U	1	b	1
1174 — Table Knives and Forks, with plain or balanced ivory handles, and of Sheffield or London make The dozen pair.		8	0	2	5	
1175 — Table Kuives and Forks, with plain or fluted handles of		J				
different patterns, in transparent ivory, with silver	r					
ferules; London make The dozen pairs	<b>3</b>	3	0.	4	14	1
The knives alone are two-thirds, the forks one-third the						
above prices. A very complete list of table knives dessert knives, carving knives and forks, and of variou.	3					
articles of kitchen and table cutlery, is given at the end						
of this Catalogue.—(See Appendix A, page 68.)						
(B.—Razors of many Kinds and Patterns.)						
1176 — Razors with handles of wood, buffalo-horn, tortoiseshell	20	,	0	0	10	0
stag-horn, ivory, pearl-shell, &c Each	_		U			
ther cases The pair	0	6	0	0	12	-
1178 — Razors in Russia or Morocco leather cases, lined with sill	4			1	10	)
velvet, and containing three or four razors each The se	t] L	0	0	ß	10	
1179 — Razors in sets, consisting of seven blades made to fit on		0	0	1	16	0
handle, and marked for every day in the week - The se  1180 — Razors in sets of seven, also marked for every day in the		U	4	1		
week, and with separate handles of ivory, either plain of						
fluted, contained in handsome cases of Russia or Morocco	0			-	3	
leather, or of mahogany with brass mountings - The se	12	10	U	-		۱

	I	rom			То		
No	£	s.	d.	£	8.	d.	
CUTLERY continued—Razors.							
are closed entirely flush with the handles The pair	0	12	0	0	15	0	
are closed entirely flush with the handles - 2 the part		1		0	10	U	
Razors with very thin blades, riveted into brass backs, and		10		0	3.5	0	
Razors with very thin blades, riveted into blades.  furnished with ivory handles The pair  Razor Hones; German and other hones, either with or  Each	U	12	U	0	19	0	
Ragor Hones: German and other hones, either with or							
		3	0	0	10	0	
v Common by Econitica Citierion Seron, and various	1						
others of a less expensive kind Each	0	2	6	0	15	0	
others of a less expensive kind	0				2	- 6	
Razor Strop Paste, to renovate the above strops The box	0		v		~	0	
(C Scissors of many Kinds and Patterns.)	1						
	0	0					
1186 - Button-hole scissors The pair	U	2	6		5	0	
		2	6	0			
1187 — Cutting-out scissors	0	1	6	0	2	6	
1187 — Cutting-out scissors  — Drapers' scissors, short, with round ends	.0	2	6	. 0	7	6	
	1						
	0	2	c	0	6	0	
			6			-	
	0	2	6				
192 — Grape-scissors, to cut and note 193 — Hair scissors	0	3	0	0	5	6	
1193 Hair scissors							
194 — Horse-trimming scissors, both straight and curved, some with the pair combs	. 0	3	6	0	7	6	i
		1.0	()	1	16	6 0	1
		10	41	1 4	16	, ,	,
line T sith on with two tine points, or will one in	2			1 _			
and one club point The pair	0	2	- 6	. 0	) [	6	)
and one club point	6			1			
1197 — Ladies' scissors, in sets of two, three, four, or six pairs o				}			
		10	(	2	2 1	5 (	n
		10	(	, 4	4	, (	U
				1		_	
bows or sheaths, of silver or gold The pai	20	6	. (	) 2	2 :	2 (	0
bows or sheaths, of sliver or gold	0						
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must - a a m m m m a a a a m post		-	,	, '	,		~
				1			
Pussio or Morocco leather, containing	51						
				9			
one pair of scissors for the right many and The con-	e (	10	) (	0	0 1	6	0
the left hand - The na	100	) 4		0.	0 1	0	()
	_ (				0 1		0
Thilorof gaiggove		, .		~		-	6
1203 — Work scissors of good quality	-1	J 1		()	U	2	Ų
MOLE BEIBBOLD OF ROOM Juneal	- !			1			
Auti-lan of Carlores	- 1			1			
(D Miscellaneous Articles of Cutlery.)	- 1			1			
	.	0 4	,	01	1	0	0
Boot-hooks, in wood, ivory, or pearl handles - The pa	27	0 7	S	U	1	17	U
		0	1	6	0	5	0
ivory, or pearl handles	_	0	3	61	0 1	0	6
ivory, or pearl handles Champagne nippers, with or without corkscrews							
			3	6	0	7	6
handler and a second a second and a second and a second and a second and a second a	Car.	U	J	U	U		0
				1			0
handles of steel for the pocket	ch	0	1	6	0 ]	14	0
nandles of steel for the pocket	19.						
Corkscrews, with elevating screws, or with racks and pinion	o.h	0	2	6	1	0	0
11 1 T t Co-boomstell	16 50	44	3	0		7	6
					0		0
El. C 1 an noing trom 4 ton test lung		100	2				6
Forks for mounted in 190FV Bandles		10	5	0	U	7	0
	-			1			-
NOU I WAR OF DISCOURS ON WHILE HATTIES WHILE RECOVERS			^	4	0	3	0
rey ittings of all sizes, and		10	0	4	U		
Land to and an a second	ich	10	0	4	U		
bossed to order - bouleved steel rollers, and	ich of			0	1	1	0
bossed to order Knife Sharpeners, with hardened steel rollers, and	of ach	0	7	0	1	1 3	
bossed to order Knife Sharpeners, with hardened steel rollers, and	of ach	0		0	1 0	1 3	6
bossed to order - bouleved steel rollers, and	of ach	0	7	0	1		

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No.	F	rom		Го	
CUTLERY continued—Miscellaneous articles.			£		d
1216 Lancets, in sets of 2 to b, in cases The set	0	6 0	()	18	
1217 - Lobster-crackers, similar to nut-crackers, but larger and					
stronger The pair	0	5 0	0	7	-
1218 Nail Files and Nail Knives of various patterns, entirely of					
steel, or with ivory or pearl-shell handles Each	0	1 6	0	6	
1219 - Nail Nippers, with curvilinear blades; of small size for					
ladies, and larger for gentlemen The nair	0	4 6	(	) 8	
ladies, and larger for gentlemen The pair  1220 — Nut-crackers of steel, or plated ,	0	2 0			ш
1221 - Pen-making Instruments, with or without nibbers and		-			
pen-blades, and in ivory or pearl handles Each	1	0 (	1	16	ш
1222 — Phlemes for bleeding horses, oxen, &c. made with sets of		0 (	'	111	-
2, 3, or 4 blades, in stag-horn and other handles The set		4 6	5 (	3 *	
		4 (	, ,	3 (	
1223 —— Skates of various improved kinds, including the Oxford, Cam-					
bridge, and Skating Club patterns, Rodgers's spring skates					
and others The pair	0			1 16	
1224 - Snuffers, plain and patent, of many patterns - The pair	0	1 (	9	0 14	100
1225 - Steels for sharpening dinner-knives; plain and fluted, in					
handles of horn, stag-horn, ivory, &c Each	0	2	G	0 (	-
1226 - Stilettoes for work-boxes, with ivory or pearl handles -			0	0 3	
1227 — Teeth Instruments, in ivory handles, and in cases, containing			,		
two, three, four, or six instruments Each		2	G I	1 10	1
1000 Tongue sampons of home toutoiseachall and cilron	0			0 (	
1228 — Tongue-scrapers of horn, tortoiseshell, and silver - 1229 — Tweezers of different patterns	0			0 3	
1229 — Tweezers of different patterns	-10	1	U	U	
1230 CYMAGRAPHS, invented by the Rev. Prof. Willis (See			_		
Drawing Instruments, Nos. 1286 and 1287) Each	10	7	U	6 (	
1231 DENTISTS' TOOLS in great variety; and also scaling instru			1		
ments for the teeth					
1232 DIAMONDS. Etching, writing, and glaziers' common diamond	3 0	9	0	0 13	0
1233 - Diamonds with swivel movement, for crown and plate-glass			1		
mounted in brass, electrum, or silver, with wood or iver	V				
handles Each	0	18	0	2 1	) "
1234 — Diamond mortars for lapidaries and seal-engravers Each	11	1		1 1	
Diamond mortars for lapidaries and seaf-engravers Each	6 L	1			
1235 - Diamond powder, prepared for use The cara	6				
1236 DIVIDERS, or spring compasses, with adjusting screws.				0	2
1237 — Spring dividers, from 3 to 9-inch black Each	10	2		0	
1237 — Spring dividers, from 3 to 9-inch black Each 1238 — 3 to 9-inch bright	- 0	2	6	0	.)
1239, with cone or bullet-points	-'0	3	6	0	b
1240 DRAW BOLTS used by shipwrights and others	-10	2	0	0	3
1241 DRAW PLATES for drawing round, oval, square, and triangu	_		-		
lar wires Each	50	3	0	2	2 1
LUX WILLOS Edo			1		
TOTA DE ATTITUTE INCORDITATENTO	1				
1242 DRAWING INSTRUMENTS in great variety, many of which	1				
are made both in brass and electrum.					
	1		1		
(A.—Drawing Instruments in complete Sets, with Scales, &c.)					
1243 - Sets of common drawing instruments for the pocket, in fish	-				0
skin cases The se	40	10	0	11	()
1244 — Sets of drawing instruments of good quality, fitted in leather	2		1		
cases, lined with silk or velvet, the instruments of bras	0				
		10	0	4 1	0
or electrum The se	III.	IU	V		
1245 — Sets of drawing instruments of the best quality, in mahogan	1				
or rose wood cases, the instruments of brass, electrum	9		1		
or silver, with ivory scales. These are sometimes called	4]			05	0 1
magazine cases The se	14	0	0	23	0
(B.—Dividers and Pens for Drawing.)					
1246 - Dividers, common, 3 to 9-inch The pair	0	2	0	0	1
1247 — Dividers, best, with sector joints —	0	3	6	0 1	0 1
1247 — Dividers, best, with sector joints —	0	7	0	0 1	0
1248 — Dividers, with graduated wings and set screws -	10	-			

	T	ron	1		Te		
No. DRAWING INSTRUMENTS continued.		8.		£	8.		
DRAWING INSTRUMENTS community of the Area	0	_		0	10		
.10 — Hair dividers, for accurate purposes, and — The pair ment to the one leg	U	5	6	U	10	6	
ment to the one leg  Screw dividers, with screw micrometer adjustment connecting the two legs  The pair		12	0	1	(	0	
ing the two legs - Each		3	0	0	4		
	0	4	6				
To all your ow those for double lines " " "	0	6	0	0	12		
		2	0	1 -			0
1954 — Dotting pens, with various which are the dozen		_	Ī	1			
				1			
(C Compasses with Pen, Pencil, and Divider Points.)	1						
1256 - Compasses, single jointed, with pen, pencil, and divide			,	J,		_	^
		10	(		) I	8	0
Tommorphe of anove, but double printed, and or				) :	1	0	0
quality - The se quality - The se and the second se							
		5	(	0 :	1 1	5	0
Down many how noncies, and now dividers, with source	- 1			0 +	0	7	6
		4	,	"	(P	1	U
1260 — Bow pens, peneils, and dividers larger than usual, single an double jointed, and with or without needle points Each double jointed, and with or without needle points	us;			0	1	0	0
the C							
		6	(	6	0	8	6
toca Train to the many be closed or opency, without	101						
				1			
ened, so as to form a ruling pen; useful in finishin drawings Each drawings Each drawings Each drawings Each drawings Each drawings		1	3	0	0 :	10	0
	I.				,	10	0
points are attached by pivots, and never removed Each Bow compasses, double jointed, with needle point, pen, ar	2	18	3	0	1	10	0
Bow compasses, double jointed, with needle point, pen, ar	u						
pencil points, and lengthening bar, thrades, sufficie	nt			-			
		<b>3</b>	2	0	2	12	6
neelect hooks H & CO.'s Dallern	0"		ži.		-	1.00	-
1865 — Bow compasses, with pen and pencil points, having a central axis, spring socket and screw adjustment. French participates and screw adjustment.	it-						
	120 2	2	0	0	2	10	0
	in			-			
brass and electrum; of various constructions and size	etil	0 1	5	0	2	12	6
brass and electrum; of various constant to the some with lengthening bars and bow tops The some with lengthening bars and bow to							
scales, &co The	set	1	0	0	3	3	0
000000							
(D.—Proportional Compasses, Beam, and Triangular Compasse	8.)			1			
	i						
Proportional compasses with fixed centers; namely, in	ne						
			0	0	1	10	0
proportion of one to two, (or wholes the three, two to three, and other proportions — Editors — Proportional compasses 6 inches long, with shifting center of the compasses 6 inches long, with shifting center of the compasses 6 inches long, with shifting center of the compasses							
graduated for the relations of lines, superneles, cubes,	VA	1	6	0	1	10	0
Cincles and Color Catalog - a a a a			6	U	T	10	-
	ich	2	2	0	3	3	0
Proportional compasses as above, with the series of the se						1.4	-
			15	0	4	14	6
joints ; for making large diagrams, and for other purpos		1					

	40430				
No.	Fron			Tc	
DRAWING INSTRUMENTS continued.	£ 8.		£	3	a
1273 — Proportional callipers of H. & Co.'s patterns, having calliper					
bows at the one end, and divider points at the other, for					
making accurate drawings of machinery and solid objects					
with great expedition; and also to assist in making, with		- 1			
the lathe or otherwise, objects of scales differing from		- }			
those of the drawings from which they are copied. Some		ı			
of the proportional callipers are made with fixed centers,					
for definite proportions; others have shifting centers, are					
fully graduated for many proportions, and are made with					
a contrivance to prevent the possibility of the shifting					
centers becoming altered, whilst the instrument is in use.					
This mode is equally suited to all such instruments	0 10	0	4	4	0
1274 — Triangular compasses, with or without lengthening bars, for					
transferring triangles Each		0	1	10	ж
1275 - Beam compasses, with wooden or metal beams, two shifting					
heads or sliders, and various points for drawing, &c. Each	1 10	0	4	0	я
1276 — Beam compasses as above, but with graduated beams and					
micrometer adjustments Each		0	6	6	×
(E.—Instruments for Drawing Ellipses,)					
(E.—Instruments for Drawing Europses,)					
1277 — ELLIPTICAL COMPASSES in brass or electrum; the ordinary		-			
trammel with a cross and beam used for striking ovals.		1			
This instrument (which resembles 1275, with the addi-					
tion of the cross,) only serves for ovals that are larger than					
the cross, and those in which the difference of diameter					
does not exceed the length of the arms of the cross Each	3 3	0	6	6	0
1278 — COWPER'S TRAMMEL. The guide has a fiducial edge, to be		ij			
placed on the diameter of the intended ellipse. This in-					
strument only strikes the half of the ellipsis at once, but		1			
is very easily placed in position, and is universal, or ap-					
plicable to all ovals intermediate between the right line					
and semicircle, when they do not exceed in diameter the					
length of the guide or fiducial edge Each	2 2	0	4	4	0
1279 — HICK'S ELLIPSOGRAPH. A modification of the pentagraph, in	0 0				
which templets or gage ovals are used, and other curves		п			
may be employed. This instrument offers great facility		- 1			
in placing it exactly on the diameters, and serves for the		-1			
amellest ellinear especially those required in icometrical					
smallest ellipses, especially those required in isometrical					
perspective, which have nearly the relative diameters of		1			
7 to 12. This instrument is described in the Trans. Soc.					
of Arts for 1842, Vol. 54, p. 8.					
1280 — CLEMENT's instrument for drawing ellipses. A most elaborate instrument and probably the most elaborate fitted		1			
rate instrument, and probably the most perfect of its class:					
as, in addition to its being adapted to ellipses of all pro-		1			
portions, and of every size below the maximum; the in-					
strument has adjustments for arranging ovals, or parts of					
ovals, in a variety of ways, as in describing the orthogra-					
phic projections of the sphere, the teeth of wheels, threads					
of screws, volutes, and other figures. Described in the					
Trans. of the Soc. of Arts for 1818, Vol. 36, p. 133.					
(FInstruments for drawing Ourved Lines, &c.)					
1281 Templets, or curved patterns made in wood, for mechanical					
drawing; of French manufacture, and called Pistolets.	0 1	0	0	3	(
1282 — Templets in wood or brass, formed as true spirals					
1283		-			
1 to 500 feet radius, for laying down railway curves;		1			
made to order.					
made to order.					

a service and the service and		rom			To		
	£	8.	d.	£	Ş.	d.	
DRAWING INSTRUMENTS continued.  ARCOGRAPH for drawing arcs of large circles, the centers of the drawing shoard. In	1						
ARCOGRAPH for drawing ares of the drawing-hoard. In			- {				
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perpendicular wires, to the ends of which a flexible roo	ì		- 1				
is united by pins; to this rod any easy curve may be	9		- }				
is united by pins; to this rot may conjugative &c.	2	2	0	4	4	0	
given, such as those occurring in naval architecture, &c.	10		- 1				
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The most simple symagraph is him to do a water that	LA						
and a cranked style for the pencil and a cranked style for the total	20						
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CYMAGRAPH Of the best kind, made as a district the mechs	-						
to keep the style always parallel with itself; the mecha				1			
		20		1			,
		5	0	6		) (	3
UDONTAGRAPH, invented by the teeth of wheels for	r						
machinery. Made on card-poard, with wastes	- 1			10	) :	5 (	0
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D. D. Dontognophs for refillering of Chilling	8						
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to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)							
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to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  1291 — Scales of equal parts, 18 inches long, ruled on card in Ho	lt- ls.						
to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  1291 — Scales of equal parts, 18 inches long, ruled on card in Ho	lt- ls.						
to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  Scales of equal parts, 18 inches long, ruled on card in Hozapfiel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appearance of the List at the end of this Catalogue, Appearance of the List at the end of this Catalogue, Appearance of the List at the end of this Catalogue, Appearance of the List at the end of this Catalogue, Appearance of the List at the end of this Catalogue, Appearance of the catalogue	lt- ls.						
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to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  1291 — Scales of equal parts, 18 inches long, ruled on card in Hozapffel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appedix C, page 70.)  1292 — Plane and plotting scales, in box-wood, brass, card, el	lt- ls. en- ec-	) ]		0 6	1 1	0	0
to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  1591 — Scales of equal parts, 18 inches long, ruled on card in He zapffel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appedix C, page 70.)  1292 — Plane and plotting scales, in box-wood, brass, card, el trum, horn, and ivory, of various sizes and qualities E trum, lorn, and ivory, wood, brass, and ivory, 12 to 18 in. Economic and in the state of the work of the size	lt- ls. en- ec-	1 3	3				
to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  Scales of equal parts, 18 inches long, ruled on card in Hozapffel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appedix C, page 70.)  Plane and plotting scales, in box-wood, brass, card, el trum, horn, and ivory, of various sizes and qualities Etum, horn, and ivory, of various sizes and qualities. Chain scales, of box-wood, brass, and ivory, 12 to 18 in. Ed.	lt- ls. en- uch 0	1 3 1	3	6	1	0	0
to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  Scales of equal parts, 18 inches long, ruled on card in Hozapffel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appedix C, page 70.)  Plane and plotting scales, in box-wood, brass, card, el trum, horn, and ivory, of various sizes and qualities for the control of	lt- ls. en- uch 0	]	1	6	0	5	0
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to different purposes in the graphic and useful arts.  (G.—Scales, Parallel Rules, Sectors, and Protractors.)  1291 — Scales of equal parts, 18 inches long, ruled on card in Hozapffel & Co.'s dividing engine. The dozen, 9s. Singly, each.—(See the List at the end of this Catalogue, Appedix C, page 70.)  1292 — Plane and plotting scales, in box-wood, brass, card, eltrum, horn, and ivory, of various sizes and qualities. English and control of the scales, of box-wood, brass, and ivory, 12 to 18 in. English Chain scales, to match the above — Donn's, Gunter's, Marquois's, navigation, logarithmic, a various other scales, to order — Evarious other scales, to war wood brass, ebony, and ivory.	lt- ls. en- uch 0 and duch 0	]	1	6	0	5	0
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HOLIZATIFEE AND CO.S GENERAL CATALOGUE	10	044.				
No.	1	Fron	3		To	
DRAWING INSTRUMENTS continued.	£	8.	d.	£	8.	1
(H.—Drawing Squares and Drawing Boards, &c.)						
1302 — T Squares of ebony and mahogany, 12 to 36 inches long,						
with fixed or shifting stocks, and of various qualities Each	0	5	6	1	10	1
1303 — T Squares with steel blades, 18 to 36 inches long, and with						
fixed or shifting stocks, of wood or metal, with or with- out graduations, and of various qualities Each	0	7	6	2	10	
1304 —— Set Squares, or Triangular Squares, of mahogany, from				Ĭ		
2 to 12 inches long, with angles of 30, 45, and 60 de-		,	0	0		
grees Each  1305 — Set Squares of box-wood and ivory with graduations, to order	0	1	0		5	
1306 —— Nicholson's Centro-linead, for drawing lines to a distant		1	0	U	24	
center; used for perspective drawings Each		В	0	1	12	0
1307 — O'Brien's substitute for the Centro-linead, rewarded by the						1
Society of Arts. 1844; consisting of a T square, with						
central blade, a two-foot rule without graduations, and two points or brad-awls Complete		12	0	1	0	0
1308 — Drawing Boards in deal or mahogany, of various sizes, and	1		1		Ĭ	
constructed in different ways, to lessen their disposition to	1					
become warped; made to order Each	0	10	0	2	10	0
1309 — Drawing Boards intended for the carpet-bag, &c. glued up in three thicknesses of mahogany, both to avoid warping.	1					
and to enable the board to serve as a sheath for the						
drawing square accompanying the board; sizes from 10						
by 15 inches, to 16 by 24 inches. H. & Co.'s pattern Each	0	18	0		5 6	
1310 Drawing Pins, of brass, electrum, and steel - The dozen	0	2	U	U	6	1
(N.B.—All descriptions of Instruments, Scales, Rules	,					
&c., for Drawing, made to order.)	į.					
1311 DRESSING CASES in great variety, and made to order.	1					
1312 — Leather roll-up Dressing Pouches, in basil, Morocco, or Russia leather Each	1	0	0	5	0	8
1313 — Leather Dressing Cases, variously arranged	2	0	0	6	0	U
1314 — Mahogany and Rosewood Dressing Cases for ladies or gentle						
men, with trays lined with velvet, or with instrument	3	10	0	20	0	0
inlaid in the solid wood Each Any of the contents may be had separately.	2	10	0	20		
Ziny of the contents may be had separately.	1					
1315 DRILLING TOOLS of various kinds.—(See also Boring Tools Braces, Brace-bits, and Breastplates.)	,					
(A.—Small Reciprocating Drilling Tools.)	1					
(121 Dillat 2000)						
1316 — Drills or Breast Drills, with brass or wood ferules Each	0	0	6	0	2	-
1317 — Drill Stocks with centers, brass ferules, and sets of 6 to 12				١.		1
drills	0	4	6	0	Ħ	1
1318 — Drill Stocks with handles of various patterns, and 6 to 12		7	6	0	10	ŧ
drills; country made Each 1319 — Drill Stocks, with fluted cocoa-wood handles that contain 12		1	V			
drills. H. and Co.'s pattern, made of three sizes Each	10	15	0	0	18	0
1320 — Drilling Lathes and 12 drills, suitable for handles, or to be	1			9	0	0
held in the vice Each	0	9	0		2	0
1321 — Drill Bows for the above, of cane or whalebone 1322 — Drill Bows of steel; of various kinds	0	1 3	6		30	6
1323 — Freeman's Drill Tool, a substitute for the Drill Bow		0				4
Registered, Jan. 1844. Manufactured by H. & Co. Each	0	1	6	0	-	0
1324 — Upright Drill Stock, with cross staff	0	5	0	1 1		

THE CANADAT CATALOGUE 1944	
HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.	
0 1 0 - 3	
DRILLING TOOLS continued.	
(B.—Smith's Manual Braces and Press Drill Frames.)	
The 1 Proces with an without	
Crank-form Brace, or common Haud Brace, with or without serew for supplying pressure	
2 10 0 4 10 0	
Ratchet Drift - Abo last with spring clutch, &c. 2 10 0 4 10 0	
Shank's substitute for the last, with spirits  Shank's Differential Screw Drill, for very large holes, moved  with self-acting motion to the	
by a winch handle, and with self-acting motion to the	)
Proce Duill Vice Stand, and Clamp. This consists	
of a heavy tripod stand, with a large vice and a clamp,	
for holding pieces not exceeding 18 inches square	
is adaptable to all positions, the work had stated on on	
al according to its size and form. A double will	
The Smith's press drill, when large and strong, is well adapted to manufactories and public works; when adapted to manufactories and public works;	0
	47
332 — The Press Drill Frame belonging to either of the above, mounted on wooden benches, with or without the vice or	
-lu nam	
Press Drill Frames, of smaller and more portable kinds, to be attached to the bench, the vice, or to the work	
that is being drilled 3 0 0 5 0	0
(C.—Boring and Drilling Machines.)	
1334 — Apparatus for Drilling and Wheel cutting, &c., applicable	
to metal turning sliding rests. Designed by the Rev. Prof. Willis, re-constructed by H. & Co. (For the	
description and Lethe Apparatus, No. 1627.)	
pendage to the lathe for rapid drilling, in which any required degree of pressure may be employed against the	
risk of accident. It is likewise suspect of successive	
pieces; both hands are at liberty for the management of	
4)	
Upright Boring Machine, in which the cut is forced in with a lever, either by the hand, a weight, or by a screw with a lever, either by the hand, a weight, or by a screw with a	
shifting table, having clamps, botts, etc., for vory	
of holes in right lines, circles, &c., and to the employment of cutters in various ways; it is worked either by a	
Grinding, Sawing, Screw-cutting, Shaping, Planing, Turning, Wheel-cutting, &c.—(See Boring, Drilling,	
1338 ELLIPTICAL INSTRUMENTS, or Trammels for Drawing.	
(See Nos. 1277 to 1280.)	

Andrew Control
No.
1339 EMERY, in nowder of various dogrees of frances
1340 — Emery paner
1341 — Emery sticks, for polishing iron and steel Each
1343 — Burnishers; oval, round, and square Each 0 1 0 0 5 1344 — Cushions, of various sizes 0 1 0 0 5 1345 — Diamond points for etching 0 9 6 0 1
1040 — Diamond points for etching
1340 —— Etching points and needles of steel on day noints
Uravers; square, lozenge, chalk, and knife gravers
1348 — Magnifiers — 0 I 6 0 2
1349 — Magnifier stands of different qualities
1350 — Mezzotinto grounding tools
1351 — Scrapers, fluted and plain — 0 5 0 1 0 0 2 0 0 3 1353 — Scorpers; flat, round, half-round, feather-edged, &c. — 0 0 2 0 0 0 2 0 0
1352 — Scorpers; flat, round, half-round, feather-edged, &c. — 0 0 2 0
TOTAL TAXILITIES TOURS III Sells, Titled to onvila
1355 FERULES of brass for tool handles The lb. 0 4
1000 DIT DO GUIDDING
1356 FILES, SHEFFIELD AND LANCASHIRE.
133/ — Files of the usual kinds. Of the numerous
varieties of files that are ordinarily manu-
lactured, those enumerated in the following
nst may be considered to be most in use   3-inch   0 30 1 0 30
amongst artizans in general: they are ar.
ranged in the supposed order of their use.
tion a serve being the most in requisi- 6— 0 50 70 9:
tion; namely,
Parallel hand-files, half-round, pillar, taper, 8 0 80 10 1 1
cross, round, triangular, square, slitting, 9 9 91 0 1 1
and knife-edge files. Of the numerous 10 0 10 1 2 1
other files, many are nearly restricted to 12—101 9 2 13
particular purposes, especially to clock and 14—1 9 2 6 2 61 watch-work.
The appears 2 - 1 0 1 0 1 10 - 12 / 12 0 11
Lancashire files denote the selection of Sheffield and 18—3 65 4 5 67
Lancashire files, denote the average prices of all kinds, the smoothest being the most
expensive.
1358 — Files for sharpening saws; namely, triangular, half-
round or gulletting flog and will triangular, half-
round or guiletting files, and mill-saw files, 21 to 8 inches Each 0 3 0 9 0 5
1359 — Files and rasps for joiners and cabinet-makers, 5 to 16 inches — Files and rasps for formions and above 1360 — Files and rasps for formions and rasps for
inches and capitlet-makers, 5 to 16
1360 — Files and rasps for farriers and shoemakers, 5 to 16
inches and shoemakers, 5 to 16
Turners, or mes and rasns bent to a variety of annual
and panding for cabinet makers common J
The state of the s
1303 — Rubbers, or thick hopey Classes
tions, and from 10 to 16 inches large and triangular sec-
tions, and from 10 to 16 inches long, rough, second-cut £ 6. d. £ 8. and smooth
1364 — Raouil's files, which are out by machine at
pally smooth flat files, 3 to 7 inches in length - Each 0 1 0 0 3
AVOISOUR (DIE OUIII) CHEVI(INCON GLOS Grove O 4- 10 ! 1
OMMINICIPAL BU ME TO THERETE ONE CORNOR and and and
side. Rewarded by the Society of Arts, 1843 - Each 0 1 0 8
jewellers and others, with cast-steel rollers from 2 to
6 inches long.
,

		om	1		To	,	
	£	Eu E	-	£	.9	d.	
FORGING TOOLS.			ł				
L'anging tools in sets fitten to anvits, anapoeu either to ordi-	6	0	0 1	i 4	G	0	
nary smith's work, or to farriery The set nary smith's work of the smith or farrier; in cast-			-1				
ing with cost and water troughs, the bellows are in a							
and the frame of a very light construction. This lorge							
is norticularly useful in those cases where easy removal			1				
is wanted viz to millwrights, builders, railway contrac-			1	14	0	0	
tom on in contlemen's stables, and farm-vards, &c				I.E	· ·	•	
170 — PORTABLE FORCE of east-iron, for smith's work of small scale, with a pair of bellows, worked by means of an iron							
treadle; nine fire-irons, or pairs of tongs, &c. Complete			i	8	0	0	
1371 — PORTABLE FORGE as above, but with twelve fire-irons. A							
small furnace canable of melting about eight poulius of			- 1				
has and six crucibles. An additional small grate lor							
chargon and an oil-lamp, to be used with a blow-pipe			- 1				
adapted to the hellows, having three jets for blasts of differ-	1		1				
ent degrees of intensity. This apparatus serves also as a table blow-pipe, and for numerous larger applications of			1				
heat, not exceeding that required to weld a bar of iron							
and inch garage COMDE	31		ı	12	W	0	1
1 -1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		10	0	0	10		
duct the smoke when the force is not placed under a lide	7	10	0	3	10	- 0	,
1373 A nedestal of cast-iron, and sheet-iron hue, to chapit	2						
the furnace of the force, No. 1371, to be more conve	311						
niently used, as an air-furnace; it is then simply erected							
on the ground, quite independently of the forge, and with out brick-work, being complete in itself Complete				1	10	1	)
out brick-work, being complete in the fit	f						
has with nedestal, tile, chimney, &c., complete, The	4						
as in the last arrangement, simply requires to be place	a						
on the ground as in the middle of a vard: or if used i	O. I						
		10	n	6	10	) (	0
with a German stove Complex  With a German stove Complex  Flasks, or casting-boxes, for moulding small works together  The stop of the few simple tools used in moulding small works.	80	10		"			
with core-boxes, and the few simple tools used in moulding							
with core-boxes, and the lew simple roots and an another							
ing objects in sand.  Soldering apparatus; namely, a birch-wood or mahogan	у						
case containing four boxes, with resin, borax, coarse an	a l			i			
Sno analtan two awas for mixing solder, one cup for sa							
ammoniae water, one glass bottle for ditto, two coppe	r	10	0	2	2 1:	5	0
		4		6 0			6
TAMARLIN S PARABINING CONTEST DIEST (SOCIETY)		1	6	3 (	) !	2	6
FREEMAN'S Drill Tool. (See No. 1323.) Each FURNACES for melting brass. (See Nos. 1371, 1373, and 1374	.)						
1380 GAGES for various purposes, in the mechanical arts.							
(A.—Gages for Joiners.)				1			
	1						
Marking gages of beech-wood, or hardwood, the heads fa	8-	1		0	0	1	6
tonad aither with governor of well of a see a see	ca u	i				5	6
Untting and routing gages as above, Various	- 10	-					
Mortise gages with two points, one of them capable of a justment either by hand or by an end screw - Ea	ch 0	2		6	0	7	6
justment eitner by nand or by an end serew	1						
(BGages for Sheet-metal, Wire, &c. all but the first three ma	de						
by H. and Co.)							
Birmingham, iron-wire and sheet-iron gage Bo	ch (	) 3		0	0 1	10	0
Birmingham, iron-wire and sheet-iron gage  Birmingham, brass-wire, sheet-brass and metal gage  Ed	ch (	) 5		0	0	10	0
admingham, prass-wire, sheet-brass and moss 8.6							

	-		-	-	
No. GAGES continued.	From		£	T .	
1,36 Lancashire steel-wire gage; the smaller sizes distinguished					
by figures, the larger by letters, without reference to		0			
	0 7	0	0	10	
1387 —— Standard sector gages, recommended by the Scottish Society of Arts, to be used for wires, sheet-metal, &c. The sec-		1			
tor gage is usually made of two straight steel bars, placed					
obliquely so as to meet at the point marked 0, and to be					
half an inch asunder at the point 50; the intermediate		1			
distances are graduated into 50 divisions on each bar.					
Consequently, the wire is arrested in the angular groove, at that figure which denotes its diameter, in hundredths of					
an inch. Other proportions and sizes to order - Each	2 0	0	2	10	0
1388 — Sector gages for tubes and apertures, made on the above	1				
method; the smallest serves from 0 to \( \frac{1}{2} \) inch, the second					
from 1 to 1 inch, and so on. These also serve for setting					
callipers and other instruments, either to decimal measures, or to the subdivisions of the inch into 8, 16, 32					
parts, if the sector gages are so graduated Each		0	0	14	1
1389 — Sliding gage of brass, having both narrow parallel jaws, and		1			
large calliper bows; adapted, amongst other uses, to mea-					
sure the central part or rib, between the flanges of rail- way bars. The stem is graduated into inches, and thirty					
seconds, and also into tenths, with a vernier to read off in		1			
hundredths of an inch Each	1		2	]0	N
1390 — Sliding gages of steel, about 6 inches long, and very light,					
with gun-metal sliders, graduated into tenths of an inch,			0	18	N
with a vernier to read off in hundredths Each 1391 —— Sliding gages similar to the above, but in brass, and more		1	U		
delicately made, with a chamfer slide and bearing spring		1			
and with a vernier to read off in thousandths of an				^	-
inch Each			2	3	9
1392 — Chater and Hayward's micrometer gage, for sheet glass,					
sheet-metal, &c. it has a screw with a large graduated disk, by which the thicknesses may be accurately read in					
thousandths of an inch, or in fractional parts as the 8th					
9th, 10th, to the 40th, of an inch. Chater and Hayward's	3				
gage is used by the Excise for glass, and well deserved	3		2	5	(
to be generally adopted as a sheet-metal gage Each			6	J	-
1393 — Parallel gage, with long jaws, for trying the parallelism of works that are under formation. This has no graduations			1	16	U
1394 — Marking gage for accurate works in metal; made in brass					
somewhat after the manner of the carpenter's gages, but			1	5	0
graduated like No. 1389 Each		1	1	9	-
1395 GARDENING AND PRUNING TOOLS, various, and in sets		1			
(See Pruning Tools, Nos. 1730 to 1750.) 1396 GEOLOGICAL TOOLS AND INSTRUMENTS.					
1397 — Geological and mineralogical hammers, with square, round	,				
and globular faces and chisel edges, &c. including	2				
Bakewell's, Roberts', Robison's, the Ordnance Survey		6	0	10	ij
and other geological hammers; variously handled Each 1398 —— Geological chisels, and also the picks or Cornish gads used	0 4	0			
in mining Each	0 1	6	0	3	()
1399 — Bakewell's angle meter, for ascertaining the vertical and		1			
horizontal inclinations of geological strata. The angle					
meter somewhat resembles a sector, and the more com-					
plete have a moveable spirit level and a mariners' compass attached, the whole being contained in a leather case for					4
the pocket Each		0	2	12	1
1400 - Inclinometer; an instrument for the same purposes as the					
last. It consists of a mariner's compass, the case of	ři	-			
which is square, for directing the position of the instru-	1	1			

ment, and which contains a metal plumb-bob, to denote vertical angles ————————————————————————————————————
ment, and which contains a metal plumb-100, to dealede vertical angles
Geological tools and instruments; namely—hammers, chisels, measuring tape or chain, plumb-bob, boxed compass, &c., variously assorted, and fitted in belts, ponches, or cases, to order.  GIMETS, common and twisted, with ordinary handles   ———————————————————————————————————
compass, &c., variously assorted, and fitted in betts, pouches, or cases, to order.    Source   Source
compass, &c., variously assorted, and fitted in betts, pouches, or cases, to order.    Source   Source
pouches, or cases, to order.  ———————————————————————————————————
Spike gimlets, from \( \frac{1}{4} \) to \( \frac{3}{4} \) inch \( \
## Spike gimlets, from \( \frac{1}{2} \) inch 0 0 0 1 1 6 6 1 6 1 6 6 1 6 1 6 6 1 6 1
GLASS PAPER of various degrees of fineness - The quire GLASS PAPER of various degrees of fineness - The quire GLASS PAPER of various degrees of fineness - The quire GLAZIERS' TOOLS.  The Diamonds, common glaziers' diamonds - Each Switch of patent diamonds, with hard-wood or ivory handles, mounted in brass or silver - Each Switch of plate-glass, like the last, but larger - I 16 0 2 10 0 1 1 0 0 1 1 0 0 1 0 0 0 0 0 0
GLASIERS' TOOLS.  77 — Diamonds, common glaziers' diamonds — Each U 9 0 15 6  78 — Diamonds, common glaziers' diamonds — Each U 9 0 15 6  79 — Diamonds for plate-glass, like the last, but larger — I 16 0 2 10 6  70 — Diamonds for plate-glass, like the last, but larger — I 16 0 2 10 0 3 6  71 — Hammers for chipping — Each U 2 0 0 3 6  72 — Knives; chipping, hacking, pallet, putty, and stopping knives U 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0
Diamonds, common glaziers' diamonds Each   9   0   15   0
ivory handles, mounted in brass or silver Each 0 18 0 1 16 0
ivory handles, mounted in brass or silver Each   0 18   0   2   10   10   10   10   10   10
Hammers for chipping 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging —
Hammers for chipping 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging — 0 2 0 0 3 (MII — Hammers for sprigging —
Rule, with or without slides
Rule, with or without slides
Squares, or wooden T squares   2 6 0 4 6
16 GLUE, of ordinary, Salisbury and other kinds The pound 0 0 8 0 1 1 Glue-pots of copper, with the inner vessels tinned - Each 0 2 0 0 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
16 GLUE, of ordinary, Salisbury and other kinds The pound 0 0 8 0 1 1 Glue-pots of copper, with the inner vessels tinned - Each 0 2 0 0 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Glue-pots of copper, with the inner vessels tinned - Each 0 2 0 0 13 doughts. Firmer gouges, of cast steel, § to 2 inch 0 0 4 1 2 0 0 4 1 2 0 1 1 2 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 1 1 2 0 1 1 2 0 1 1 2 0 1 1 1 2 0 1 1 1 1
Grindstones, from 1 inch to 36 inches diameter, not mounted. The smallest of these grindstones are worked by winch-handles, and have rests for the support and guidance of the tools Each Grindstones, from 20 to 36 inches diameter, mounted in cast-iron troughs, intended to be placed on the bench or table. These grindstones are worked by winch-handles, and have rests for the support and guidance of the tools Each Grindstones, from 20 to 36 inches diameter, mounted on pedestals or frames of wood or iron, with water-troughs. These grindstones are worked either with treadles or winch-handles, and have rests for the support and guidance of the tools Each The grindstones are worked by Holly are mounted on an improved plan, designed by Holly are mounted on the grindstones, Nos. 1427 and 1428, are mounted on an improved plan, designed by Holly are mounted from their swindles for packing. New grind-
The above set handled in heech-wood The above set handled in heech-wood The above set handled in hard-wood The set of th
The above set handled in beech-wood  The above set handled in hard-wood  The above set handled in hard-wood  The above set handled in hard-wood  Turners' gouges, ½ to 2 inch  Turners' gouges, ½ to 2 inch  GRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  CRAVERS. Lozenge, § to 2 inch  CRAVERS. Lozenge, § to 2 inch
Sceket gouges, \(\frac{1}{4}\) to 2 inch  Turners' gouges, \(\frac{1}{4}\) to 2 inch  GRIVERS. Lozenge, square, and chalk gravers, for engraving on copper, steel, and wood  GRINDING APPARATUS.  (A.—Apparatus for Mechanicians, and Amateurs.)  Grindstones, from 1 inch to 36 inches diameter, not mounted. The smallest of these grindstones are used by dentists.  Grindstones, from 12 to 18 inches diameter, mounted in cast-iron troughs, intended to be placed on the bench or table. These grindstones are worked by winch-handles, and have rests for the support and guidance of the tools Each  Grindstones, from 20 to 36 inches diameter, mounted on pedestals or frames of wood or iron, with water-troughs. These grindstones are worked either with treadles or winch-handles, and have rests for the tools — Each  The grindstones, Nos. 1427 and 1428, are mounted on an improved plan, designed by Hollzaffel and Co.; they cannot be disturbed from their original setting, by extreme change from wet to dry, by accident, nor by removal from their swindles for packing. New grind-
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by extreme change from wet to dry, by accident, nor by removal from their spindles for packing. New grind-
removal from their spindles for packing. New grind-
stones, ready mounted and turned for work, may be sup-
plied, without requiring access to the particular machine
for which they are intended.
(D. Annualization Amaiosis Tuenous)
(B.—Apparatus for Amateur Turners.)
Grinding and polishing lathe, for the general purposes of the
Grinding and polishing lathe, for the general purposes of the amateur; with 2 grindstones, 1 metallic wheel, 1 brush,
amateur; with 2 grindstones, 1 metallic wheel, 1 bush,
Grinding and polishing lathe, for the general purposes of the amateur; with 2 grindstones, 1 metallic wheel, 1 brush, 1 buff wheel; fitted on separate spindles, after an improved manner, by which the facility of changing them is much increased. Cast-iron water-trough, with drip-can,

From s. d. GRINDING APPARATUS continued. 6 and two rests for grinding tools upon the metal lap to par-The whole mounted on a frame of beech-wood, with iron foot-wheel and treadle, backboard, and box, containing three tin canisters, with polishing powders, three brushes, and a scraper - Instruments for sharpening and polishing the straight and angular tools employed in eccentric and ornamental turning. The instrument has a horizontal and a vertical adjustment, each graduated; so that when the tool is fixed in the instrument, it may be adjusted to any definite angle required for the point, and also to any bevil or chamfer. When so fixed, the two legs of the instru-ment and the extremity of the tool together constitute a tripod, and the tool is then sharpened on a piece of oilstone, smoothed on a slab of brass, and polished on a slab of iron, respectively inlaid in the three drawers of the mahogany case, which contains the instrument, the three canisters of powders, and the oil-can required therewith 1431 -- Instruments for grinding and setting bead tools and drills for ornamental turning; consisting of a small gun-metal lathe-head, with 6 brass and 6 iron conical grinders, suited to bead tools and drills of all curvatures below § inch diameter. The lathe has also 12 drills, is mounted on a table-tee to fit the lathe rest, and is generally driven by a pulley screwed upon the mandrel of the lathe; the whole contained in a box, with a drawer -1432 --- Horizontal Grinding Machine, intended for grinding various substances, after the manner of the lapidary, but principally for grinding and setting tools that are required to have accurate, rectilinear and smooth edges, but that are beyond the range of the instrument. No. 1430. The horizontal grinding machine has a cast-iron frame, with a vertical mandrel running within a steel collar, and upon an elevating screw, for adjusting the laps relatively to the iron surface-plate. Three laps of lead, brass, and iron, used respectively with emery, oilstone powder, and crocus. The whole mounted on a frame of beech-wood, with iron foot-wheel, treadle, and a pair of guide pulleys to 10 10 0 conduct the line from the foot-wheel to the mandrel -1433 - Instrument for grinding and setting ordinary turning tools, to be used with the above. The best kind has a horizontal and a vertical movement, each graduated, nearly 0 3 as in the instrument described under No. 1430 (C .- Apparatus for Amateur Lapidaries.) 1434 --- LAPIDARY MACHINES, constructed after the manner of the horizontal grinding machine, No. 1432, so as to be worked by the foot, and fitted to order with any selection of the following wheels, namely—slicers or slitting wheels of sheet-iron—laps of lead, pewter, tin, iron, copper, &c.—and wood, cloth, buff leather, or brush wheels—so as to serve for slitting, roughing, smoothing, and polishing pebbles, gems, glass, shells, &c. The grinding and polishing wheels are screwed on the upper extremity of a vertical mandrel, running within a steel collar, and upon a center; and the wheels are surrounded by a large trough to catch the water and polishing materials. The whole mounted on a frame of beech-wood, with

0 0

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						_
No		rom			То	3
GRINDING APPARATUS continued.		8. 6	2.	£	8.	d.
iron foot-wheel, treadle, and a pair of guide pulleys, to	10		0	10		
conduct the line from the foot-wheel to the mandrel	12	U	ווט	10	U	U
1435 - Apparatus with swinging arm and various adjustments, for			ì			
holding the stones whilst they are being sht, so as to						
enable parallel slices to be cut off	3	0	0	4	0	0
Instrument for grinding facets on gems, by which each						
facet of every series may be made equidistant, and at the	1					
same angle. This instrument is a modification of that						
constituting part of No. 1430			-	4	0	0
1437 GUN TOOLS. Gun wrenches, solid or plain Each	ß	10	0	1	0	0
1438 — Expanding gun breech wrenches, with 4 pairs of jaws —				1	13	0
Car led vices	0	2	6		5	0
1439 — Gun lock vices 1440 — Gun punches for wadding	0	ī	6		2	6
140 — Gun punches for wadding	0	î	0		2	0
141 - Gun turn-screws, with and without pickers	0		- 1			
1442 GUNTER'S SCALES. (See No. 1295.)	U	4	U	0	8	0
1443 HAMMERS. Bricklayers', carpenters', chasers', clock, copper-			i			
smiths', garden, glaziers', planishing, plasterers, riveting,			- }			
saddlers', sledge, tinmens', upholsterers', vencering, and					_	_
watch hammers, with or without handles Each	0	1	6	0	6	0
See also Geological Hammers, No. 1397.						
1444 HANDLES of beech or hard-wood, from 3 to 10 inches long, and						
with brass ferrules, for files, turning tools, &c. The dozen	0	1	0	0	12	0
Will Drass territes, for mes, turning cools, te. 2 he code						
Handles, with brass sockets, having each a rectangular			1			
mortise and side serew, for awls, chisels, files, saws, turn-			1			
ing tools, and numerous other instruments, which are			- {			
made with tangs of corresponding size, for the sake of		4	0	۸	6	6
portability Each	U	4	6	0	5	U
1446 - Handles with spring sockets, clip rings, and side screws, for				^	-	
files with tangs of the customary forms Each	0	3	6	0	7	0
Handles with spring sockets of brass, with side screws as	-				_	
above, for sliding rest tools and others Each	0	7	0	0	8	0
1449 HAND PADS, or handles, with sockets and side screws for key-						
hoie saws Eacl		2	0	0	3	6
1450 - Hand Pads hollowed out to receive sets of from 6 to 24 tools	3					
for general purposes, to be carried in the pocket - Each	0	5	0	1	0	0
He Wall Transport to the carried in the public of the carried at			Ĭ			
HAND VICES, with or without handles, and with straight or		2	6	0	9	0
cross chaps The pair	0	3			7	6
652 — Pin vices	- 0		0	-		
1453 — Pin tongs, or sliding tongs	-0	2	0	v	0	U
114KU W()())) of numerous sorts, in the log, or prepared log						
turning(See Woods Nos 2075 to 2077.)	1					
HATCHETS of many kinds, handled in beech or hard-wood; also						
hatchets to be used in the left hand = = = = # & EGC	310	3	6	0	7	6
1 100 HAWTUODNIC TRICINITEDS DILLE (See Side Rules	3				_	
No. 1792.)  67 HEDGING BILL HOOKS. (See Pruning Tools, No. 1732.)  68 HICK'S ELLIPSOGRAPH. (See No. 1279.)  69 HONES for Universal Property Comman and other hones with	10	7	6			
HEDGING BILL HOOKS. (See Pruning Tools, No. 1732.)	- 0	5	0	0	12	0
458 HICK'S ELLIPSOGRAPH. (See No. 1279.)						
459 HONES for knives and razors; German and other hones, wit	h			1		
and without acces	72 I I	3	0	0	10	0
100 HOOKS AND EYES, or couplers, to unite the ends of the car	-					
gut bands of lathes, and other machinery; hooks an	d					
Over helem 1 inch	20	1	6	0	4	0
Hooks and From from I to 1 inch made to order						
Nicholl's improved hooks and eyes. Each set consists of	of					
two over for the ends of the line and a double hool	20			i		
two eyes for the ends of the line, and a double hool	et o	2	3	3 (	) 1	7 0
183 IBRETSONIS (I II ESO ) Comments about (See No. 1586	1	-		1		
Rewarded by the Society of Arts, 1842 - The series of BETSON'S (J. H., ESQ.) Geometric chuck. (See No. 1586 - Pamphi - Brief sketch of the same. (See No. 1589.) - Pamphi - Pa	02			10	) ]	5 0
Compared in the same. (See No. 1589.)	A.					
the equal division of	-					
(See No. 1640.)	1			1		
7. 0						

No.
1466 IBBETSON'S (J. H. ESQ.) Compound eccentric chuck. (See No. 1582.)
1467 Specimens of eccentric turning. Octavo, in cloth " " "
1400 INCODIMENT for gotting angular slide rest tools, (See No. 1439.) Net 5
1469 — Instruments for setting bead tools and bead drills. (See No. 1431.) Net 5 0
1469 — Instruments for setting bead tools and bead drills. (See No. 1431.) Set 5 0 1470 — Instruments for grinding facets on gems. (See No. 1436.) 4 0
1471 — Instruments for drawing, measuring, &c. (See Drawing, &c.)
1472 IRON, cast or forged, to any patterns.
1473 IVORY in the tusk : also in blocks or prepared pieces.
1474 JEWELLERS' RENCHES, with complete sets of tools, to order.
1475 JOINERS' RENCHES.—(See Planing Benches, Nos.1715 to 1/19.) 4 0 0 0 2 10
1476 WNIVES of numerous kinds. (See Nos. 1152 to 1175, and also)
the list of table knives and forks, at the end of this
Catalogue, Appendix A, page 68.)
1477 — Knives with shifting guards for cutting pasteboard partly
through; used for modelling in card Each
1479 KNIFE CLEANING MACHINES
1479 LACKERS for brass, hardwood, softwood, &c The bottle 0 2 6 0 5

### LATHES, AND APPARATUS FOR THE SAME.

No. 1480	LATHES FOR MECHANICIANS, of many different constructions, and
	with frames of wood or iron; fitted with the apparatus required
	by various classes of artizans.

1481 LATHES specifically adapted to the purposes of Boring, Drilling, Grinding, Polishing, Sawing, Shaping, Screw-cutting, Wheel-cutting, &c.

(See Boring, Drilling, &c.)

1482 LATHES FOR AMATEURS, intended for Turning Plain or Ornamental
Works of every description.

The Lathes and Apparatus manufactured by Holtzapffel and Co., for Amateurs, are exceedingly various, so as to admit of very great choice; and to assist the Amateur in the selection. Eighteen Complete Lathes are first described, and subsequently various Detached Parts of Lathes are described under appropriate heads, namely:—

#### (COMPLETE LATHES.)

- 1. Lathes, Descriptions One to Six, for the general purposes of hand turning; page 29.
- 2. Lathes, Descriptions Seven to Twelve, with traversing mandrels, or traversing tools for screw cutting and general purposes; page 31.
- Lathes, Descriptions Thirteen to Eighteen, with apparatus for plain and ornamental turning in wood, ivory, &c.; page 32.

#### (DETACHED PARTS OF LATHE APPARATUS.)

- 4. Mandrels, lathe-heads, or headstocks; page 35.
- 5. Chucks for fixing works in the lathe; page 36.
- 6. Chucks or apparatus for ornamenting works in the lathe; page 39.
- Slide rests, principally for ornamental turning in wood and ivory with tools and revolving cutters for the same; page 40.
- 8. Slide rests, principally for metal turning; with tools and revolving cutters for the same; page 42.
- 9. Miscellaneous lathe apparatus; page 43.

#### COMPLETE LATHES, DESCRIPTIONS ONE TO EIGHTEEN.

The greater number of the Lathes Descriptions, One to Eighteen, arc spe- £ s. d. cified as of five-inch center, and which Lathes have bearers 3 feet 6 inches long. Lathes for amateurs and others, are sometimes also made as small as of 3 inch center, and 2 feet 6 inches in length of bearers; and at other times as large as of 7-inch center, and 7 feet in length of bearers. Lathes of these various sizes are also made with frames either of wood or iron. The 5-inch center lathes, or those of medium size, are however the most

generally convenient for amateurs, as they are sufficiently large for the largest pieces of ivory and hardwood commonly met with; and they are also sufficiently large to allow a proportionate degree of strength in the numerous additional apparatus; without on the other hand, becoming from excessive size either unwieldy or inconvenient, as

respects the friction of their moving parts.

For occasional purposes, the range of the 5-inch lathe may be increased about one-half as to diameter, by lifting pieces, No. 1631, or about twofold as to length, by lengthening bars, No. 1632; and the 5-inch lathes are also made with iron bearers, exceeding the customary length of 3 feet 6 inches.

In selecting Turning Machinery, many amateurs prefer to begin with a small outfit, and gradually to extend it by successive additions of appuratus. Much of the Turning Machinery is constructed with the object of facilitating this, which may be called the accumulative method; as most of the lathes may be thus a vanced, to the condition of some of those higher up in the scale of completeness and

For example, it will be seen in the examination of the following descriptions, that the Lathe Description Three (£18), may, by additions, be made equal to any of those not possessing iron bearers. The Lathe Description Five (£35), may be converted into the most complete of those with beech-wood frames ; and the Lathe Description Ten (£60), may be rendered, by additions, equal or superior to the Lathe Description Eighteen, the most elaborate of those specified.

It is further to be observed that the Lathes of the different Descriptions, One to Eighteen, will in any case be modified to the extent that may be desired, by the addition, omission, or exchange of apparatus; the descriptions and particulars of which are more fully given in the subsequent pages on Detached Lathe Apparatus.

## LATHES DESCRIPTIONS, ONE TO SIX.

INTENDED FOR THE GENERAL PURPOSES OF HAND TURNING.

No		LATHE DESCRI										£	s.	d.
1483	_	Four-inch center lathe, with iron	hes	ada.	th	e m	and	lrel	wor	king	in	a		
											fran	ne	0	٥
		of basels would with plain wheel											-	
1484	-	Five-inch center lathe, as above		_		-		-	-		-	-112	-	
1405	-	rive-inch center lathe, as above	-		-	_			-			- 10	U	
line	-	Six-inch —	~	-		_						- 20	0	0
1800	***************************************	Savan inch	-	90		-						1		

No.	COUNTRY I LATTER DOD ANAMOUNDS continued	£	5.	1.
LATHE	S-Complete Lathes for Amateurs continued.			
	LATHE DESCRIPTION TWO.			
1487 ——	Four-inch center lathe, with iron heads, the mandrel working in a			
	collar and back center of hardened steel. Common popit head.			
	Rest and one tee; key and lever. Six metal chucks, and six box-			
	wood chucks. The above mounted on a frame of beech-wood, with			
100	plain iron wheel			
	Five-inch center lathe, as above	14		
1430	LATHE DESCRIPTION THREE.	22	U	0
1491	Four-inch center lathe, with iron heads, the mandrel working in a			
. 101	collar and back center of hardened steel. Common popit head.			
	Rest and two tees; oil can, key and lever,			
	Nine metal chucks, and twelve box-wood chucks.			
	The above mounted on a frame of beech-wood, with hard wood			
	bearers, and single bevil wheel	16	0	11
1492	Five-inch center lathe as above	18	()	0
1493	Six-inch			
1494	Seven-inch	30	0	6
	LATHE DESCRIPTION FOUR.			
1495	Four-inch center lathe, with iron heads, the mandrel working in a			
	collar and back center of hardened steel. Common popit head.			
	Rest and two tees; oil-can, key and lever.	1		
	Fifteen metal chucks, twelve box-wood chucks, and six box-			
	wood spring chucks, with brass rings.			
	The above mounted on a frame of beech-wood, with hard-wood			
	bearers, single bevil wheel, and case with drawers to contain the		0	v
1496	apparatus  Five-inch center lathe, as above	26	0	11
1497		32		10
		40		()
	LATHE DESCRIPTION FIVE.	-		
1499	Four-inch center lathe, with iron heads, the mandrel working in a			
	collar and back center of hardened steel; wooden pulley, with			
	division plate and index. Cylinder popit head, with leading screw,			
	two centers, and flange for boring. Rest and two tees; oil-can,			
	key and lever.			
	Fifteen metal chucks, twelve box-wood chucks, and six box-			
	wood spring chucks, with brass rings.			
	The above mounted on a frame of beech-wood, with iron bearers,			
	double bevil wheel, and a case for the backboard to contain the	30	0	()
1500	apparatus	35	0	0
1501	Six-inch ————————————————————————————————————	45	0	0
		60	0	0
1503	LATHE DESCRIPTION SIX.  Four-inch center lathe, with iron heads, the mandrel working in a			
	collar and back center of hardened steel; wooden pulley, with	1		
	division plate and index. Cylinder popit head, with leading screw,			
	two centers and flange for boring. Boring collar and guide for			
	slender turning. Rest and two tees; oil-can, key and lever.			
	Twenty-one metal chucks; twelve wood chucks, and six box-			
	wood spring chucks with brass rings.	}		
	The above mounted on a frame of mahogany, with iron bearers,			
	double bevil wheel, and a case for the backboard to contain the		43	Û
	apparatus	10	0	1
1504	Five-inch center lathe as above	55	0	0
1500		70	0	0
1506 —	Seven-inch	10		

LATHES-COMPLETE LATHES FOR AMATEURS continued.

### LATHES, DESCRIPTIONS SEVEN TO TWELVE.

WITH TRAVERSING MANDRELS, OR TRAVERSING TOOLS, FOR SCREW CUTTING AND GENERAL PURPOSES.

LATHE DESCRIPTION SEVEN.
Five-inch center lathe, with iron heads, common screw mandrel not hardened, working in gun-metal collars; six gun-metal screw guides, and apparatus for the same. Cylinder popit head, with pushing screw, two centers, and flange for boring. Rest and two tees; oil-can, key, and lever.  Nine metal chucks, and twelve box-wood chucks.  The above mounted on a frame of beech-wood, with hard-wood bearers, single bevil wheel, and a case for the backboard to con-
tain the apparatus
LATHE DESCRIPTION EIGHT.
Five-inch center lathe, with iron heads, common screw mandrel not hardened, working in gun-metal collars; six gun-metal screw guides, and apparatus for the same; wooden pulley, with division plate and index. Cylinder popit head, with pushing screw, two centers and flange for boring. Rest and two tees; oil-can, key, and lever.
Fifteen metal chucks, twelve box-wood chucks, and six box-
wood spring chucks, with brass rings.  The above mounted on a frame of beech-wood, with iron bearers,
double bevil wheel, and a case for the backboard to contain the
apparatus 40 0 0
LATHE DESCRIPTION NINE.
Five-inch center lathe, with iron heads, best screw mandrel bored throughout, hardened, and working in hardened steel collars; six steel screw guides, and apparatus for the same; metal pulley, with division plate and index. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and three tees; oil-can, key, and lever  Fifteen metal chucks, and twelve wood chucks.  Mounted on a frame of mahogany, with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus50 0 0
LATHE DESCRIPTION TEN.
Five-inch center lathe, with iron heads, best screw mandrel bored throughout, hardened, and working in hardened steel collars; six steel screw guides, and apparatus for the same; metal pulley, with division plate and adjusting index. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and three tees; oil-can, key, and lever.  Twenty-four metal chucks, twelve box-wood chucks, and six boxwood spring chucks, with brass rings.
Mounted on a double frame of mahogany, with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus

### LATHE DESCRIPTION ELEVEN.

Five-inch center lathe, with iron heads, the mandrel working in a collar and back center of hardened steel; wooden pulley, with division plate and index. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and two tees; oil-can, key, and lever.

No. LATHES-Complete Lathes for Amateurs continued.

Twenty-one metal chucks. Twelve box-wood chucks. Surface chuck with clamps.

£ 2 6

Slide-rest for turning metal or wood, with either twelve large tools for metal, or twenty-four small for wood. Simple apparatus for cutting screws, by connecting the slide rest and mandrel with change wheels, and six screw tools for the same.

The above mounted on a frame of mahogany with iron bearers, double bevil wheel, and a case for the backboard to contain the

#### LATHE DESCRIPTION TWELVE.

512 — Five-inch center lathe, with iron heads, the mandrel working in a collar and back center of hardened steel; metal pulley, with division plate and index. Cylinder popit head, with leading screw, two centers and flange for boring. Boring collar, and guide for slender turning. Rest and two tees; oil-can, key, and lever.

Twenty-four metal chucks. Twelve box-wood chucks, and six box-wood spring chucks with brass rings. Universal chuck with

three dies moved simultaneously.

Slide-rest for turning metal or wood, with either eighteen large tools for metal, or thirty-six small for wood. Complete apparatus for cutting screws, by connecting the slide-rest and mandrel with several change wheels, and twelve screw tools for the same.

The above mounted on a frame of mahogany with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus

#### LATHES, DESCRIPTIONS THIRTEEN TO EIGHTEEN.

WITH APPARATUS FOR PLAIN AND ORNAMENTAL TURNING IN WOOD, IVORY, ETC.

#### LATHE DESCRIPTION THIRTEEN.

No.
1513 —— Five-inch center lathe, with iron heads, the mandrel working in a collar and back center of hardened steel. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and two tees; oil can, key and lever.

Fifteen metal chucks, twelve box-wood chucks, and six boxwood spring chucks, with brass rings. Common eccentric chuck. Common slide-rest for wood and ornamental turning, with two

dozen tools for the same and a set square.

The above mounted on a frame of beech-wood, with single bevilwheel, and a case for the backboard to contain the apparatus - .50

#### LATHE DESCRIPTION FOURTEEN.

1514 — Five-inch center lathe, with iron heads, the mandrel working in a collar and back center of hardened steel; wooden pulley, with division plate and index. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and two tees; oil can, key and lever.

Fifteen metal chucks. Twelve box-wood chucks, and six box-

wood spring chucks, with brass rings.

Common slide rest for wood and ornamental turning, two dozen tools for the same and a set square. Drilling instrument and two dozen drills for ornamenting. Vertical cutting frame, and one dozen cutters; and a mahogany tray for the slide rest tools, drills, and cutters.

Overhead motion for driving the revolving cutters.

The above mounted on a frame of beech-wood, with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus

LATHES-COMPLETE LATHES FOR AMATEURS continued.

#### LATHE DESCRIPTION FIFTEEN.

1515 - Five-inch center lathe, with iron heads, the mandrel working in a collar and back center of hardened steel; wooden pulley, with division plate and index. Cylinder popit head, with leading screw, two centers and flange for boring. Rest and two tees; oil can, key and lever.

Twenty-one metal chucks. Twelve box-wood chucks, and six

box-wood spring chucks, with brass rings.

Common eccentric chuck.

Slide-rest for wood and ornamental turning, three dozen tools for the same and a set square. Drilling instrument and three dozen drills for ornamenting. Eccentric cutting frame to screw on the drilling instrument. Vertical cutting frame, two dozen cutters to suit the two cutting frames in common; and a mahogany case for the slide rest tools, drills, and cutters. Overhead motion for driving the revolving cutters.

The above mounted on a frame of mahogany, with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus -

#### LATHE DESCRIPTION SIXTEEN.

1816 - Five-inch center lathe, with iron heads, screw mandrel, bored throughout, hardened, and working in hardened steel collars; six steel screw guides, and apparatus for the same; metal pulley, with division plate and index, and segment stop. Cylinder popit head, with leading screw, four centers and flange. Boring collar, and guide for slender turning. Rest and three tees ; oil-can, key, and

Twenty-four metal chucks. Twelve box-wood chucks, and six

box-wood spring chucks with brass rings. Combined eccentric and oval chuck.

Slide-rest for wood and ornamental turning; four dozen tools for the same and a set square. Drilling instrument and four dozen drills for ornamenting. Eccentric cutting frame to screw on the drilling instrument. Vertical cutting frame. Three dozen cutters to suit the two cutting frames in common; and a mahogany case for the slide-rest tools, drills, and cutters. Overhead motion for driving the revolving cutters.

The above mounted on a frame of mahogany, with iron bearers, double bevil wheel, and a case for the backboard to contain the apparatus

#### LATHE DESCRIPTION SEVENTEEN.

Five-inch center lathe, with iron heads, screw mandrel bored throughout, hardened, and working in hardened steel collars; six steel screw guides and apparatus for the same; metal pulley, with division plate, adjusting index, and segment stop. Cylinder popit head with leading screw, four centers and flange. Boring collar, and a guide for slender turning. Rest and three tees; oil-can, key, and lever.

Thirty metal chucks. Twelve box-wood chucks, and six boxwood spring chucks with brass rings.

Combined eccentric and oval chuck. Spherical chuck.

Slide-rest for wood and ornamental turning. Additional apparatus to the same for curvilinear turning. Complete apparatus for cutting screws, by connecting the slide-rest and mandrel with change wheels; cutter bars with detached cutters for external and internal threads. Six dozen slide-rest tools for general purposes; six tools for the spherical chuck and a set square.

Drilling instrument and six dozen drills for ornamenting. Eccen-

£ 8. d.

No. LATHES-Complete Lathes for Amateurs continued.

tric cutting frame to screw on the drilling instrument. Vertical cutting frame. Four dozen cutters to suit the two cutting frames in common, and a mahogany case for the slide-rest tools, drills, and cutters. Overhead motion for driving the revolving cutters. Case of instruments for setting straight and angular tools.

£ 8. 4

The above mounted on a double frame of mahogany, with iron bearers, double bevil wheel, and a case with drawers to contain the several apparatus

#### LATHE DESCRIPTION EIGHTEEN.

1518 — Five-inch center lathe, with iron heads, screw mandrel bored throughout, hardened and working in hardened steel collars; six steel screw guides and apparatus for the same; metal pulley, with division plate, adjusting index, and segment stop. Cylinder popit head with leading screw, four centers and flange. Boring collar, and guide for slender turning. Rest and three tees; oil-can, key, and lever.

Fifty-four metal chucks. Twenty-four box-wood chucks, and twelve box-wood spring chucks with brass rings. Three transfer chucks, for adapting some of the fixing chucks, to all the chucks for ornamenting.

Eccentric chuck. Oval chuck. Spherical chuck.

Slide-rest, with cradle to set the same for turning cylinders and surfaces. Additional apparatus to the slide-rest, for curvilinear turning. Complete apparatus for cutting screws, by connecting the slide-rest and mandrel with change wheels; cutter bars with detached cutters for external and internal threads. Twelve dozen slide-rest tools for general purposes, and six tools for the spherical chuck.

Drilling instrument, and eight dozen drills for ornamenting. Eccentric cutting frame to screw on the drilling instrument. Universal cutting frame. Vertical cutting frame. Horizontal cutting frame, and three spindles. Six dozen cutters to suit the four cutting frames in common. One dozen additional cutters for the horizontal cutting frame; and a mahogany case for the slide-rest tools, drills, and cutters. Overhead motion for driving the revolving cutters. Case of instruments for setting straight and angular tools. Case of instruments for setting bead tools and drills.

The above mounted on a double frame of mahogany, with iron bearers; double bevil wheel, and a case with drawers to contain several apparatus

#### DETACHED PARTS OF LATHE APPARATUS.

To suit the convenience of different Amateurs, many of the detached parts of Lathe Apparatus are made of various forms and constructions, some of which are very complete and elaborately finished, and others are less complete and more plainly finished, but are nevertheless of good, sound, and useful character. The further particulars of these differences will be given on application.

Frequent disappointments have been experienced by Amateurs, particularly those resident in foreign countries, from H. and Cobeing unable satisfactority to supply some of the Detached parts of Lathe Apparatus that may be written for, on account of the necessity of such Additional Apparatus being fitted to the neighbouring pants of the Turning Machinery, with which they are required to be associated.

Much of the inconvenience has been from time to time swept away, by modifications introduced in several constructions, in order to

HOLTZAPFFELI AND CO. 5 GENERAL C	7.1.1.1.1.00.0.1.1.1.1.1.1.1.1.1.1.1.1.1
ATHES-DETACHED PARTS OF LATHE APPARATUS C	continued. £ s. d.
les such marte of the Annaratus more	neuron shaepenaens of
and other And to prevent, so far as pos	estdie. Misapprenension
I disampointment each of the Delachet	d narts of Lathe Appa-
matus Nos 1519 to 1643, is followed by a	letter of reference, in-
and and in diment attention to one of the for	Howing notes :
A.—These Apparatus may be supplied inc	denendently of the cor-
responding parts, and without apprehens	ion of disagreement.
B.— These Apparatus may be supplied indep	nandantle but a triffina
B These Apparatus may be supplied indep	of their disconsenses.
and unimportant risk is then incurred	of their usagreement;
but which disagreement may, in most ca	ses, oe corrected by the
Amateur himself.	
C.—These Apparatus can be supplied,	provided certain mea-
amomente and narticulars are previously	transmittea.
D These Amanatus can be sunnited, in	a modified and nearly
finished state, together with instructions	as to how the Amateur
may complete and adapt them himself.	
L' These Apparatus as at present consi	tructed, cannot be sup-
1' 1 and annot be cumpled.	an a saustagiorn man-
man amless the neighbouring narts of the	he Turning Machinery.
with which they are to be used, are tran	smitted to H. and Co.,
to enable the new work to be fitted.	
to estable the 190m marie to a Junion.	
MANDRELS, LATHE HEADS, OR	HEADSTOCKS.
(A.) Collars and Mandrels to be Mounted	
10 Correspond Mannager of for goft-wood turning	and common purposes,
to be mounted in detached wooden headst	ocks. The collars and
to be mounted in detached wooden nesses	
mandrels are charged as follows:—	12 14 16 18 inch.
Sizes - 8 9 10 1	6. 49. 54. 78. each
With outside screws 27s. 30s. 33s. 3	10s. 48s. 60s. 88s. each. A.
With inside screws 30s. 33s. 35s. 4	abanged out was
The center screws and pulleys are	charged extra-
G 7	Dipposes
(B.) LATHE HEADS OF CAST IRON FOR G	ENERAL I URPOBES.
	a Just working
Three-inch center lathe heads, not japanned	i; the manarel working
between a steel collar and back center, woo	band turning The Set. 5 0
center screw . and a rest with two tees IOF	nand turning.
- Four inch lathe heads as above	
Five inch	/ / / /
- Six-inch	9 0
1521 - Seven inch	
Little Hanna throat a seven inch as anove	with metal pulleys and
diata 1 to 3 with common or host	cylinder popit neads A.
LITTLE LINE HOLDEN HELVY METAL TURNING.	WORKING CITIES III DIAGO
aulindrical bearings on in two conical (	collars of steel after Cic-
ments's method, and fitted with secondary	v spindles, or gearing for
slow motion =	A.
PROM THOUGH =	
(C.) LATHE HEADS, AND APPARATUS FO.	R SCREW CUTTING.
	E E
117 - COLLARS AND MANDRELS FOR SCREW CUTTI	NG, or Tunbridge screw
1 1 6 6 1 Assemble 60 F	no molinieu ili ucaciica
wooden bands aftenthe monner of NO 12	3 19. I Here are in our
hack contor corow is withdrawn =	
The center screws and wood-work are ch	harged extra A.
THE COLLECT SCIEWS MILL WOOD-WOLK AND OF	and the same warms 94

LATHES-DETACHED PARTS OF LATHE APPARATUS continued. - FOUR-INCH CENTER LATHE HEAD, with traversing or screw mandrel, not hardened, and working in cast iron; six brass screw guides. with suitable apparatus to work in white metal; common popit head; rest and two tees - - -- Five inch, the same as above. - Six-inch 1530 -1531 -- Seven-inch . - FOUR-INCH CENTLE LATHE HEAD, with traversing or screw mandrel 1532 -working in gun-metal collars; six gun-metal screw guides, with suitable apparatus to work in brass; pulley, with division plate, and index; cylinder popit head, with pushing screw and two centers ; rest and two tees - -Five-inch, the same as above. 1533 -1534 ---- Six-inch 1535 -- Seven-inch - FOUR-INCH CENTER LATHE HEADS, with traversing or screw mandrel 1536 bored throughout, hardened, and working in hardened steel collars; with six steel screw guides, and apparatus for the same; metal pulley, with division plate and index; cylinder popit head, with leading screw, two centers, and flange; rest and three tees 1537 - Five-inch, the same as above. 1538 -- Six-inch - Seven inch 1539 -- APPARATUS FOR SCREW CUTTING, to be added to lathes with or without 1540 ---traversing mandrels, by connecting the mandrel to the screw of the slide-rest, by a series of change wheels, arranged in a simple form, for a small number of screws of the ordinary threads for mechanism -1541 --- APPARATUS FOR SCREW CUTTING, arranged in a much more complete form than No. 1540, with additional change wheels and mechanism, so as to serve for cutting right and left-hand screws, of great numbers of pitches. The finest threads or pitches, namely, from 100 to 300 to the inch, are employed for self-acting turning, or turning smooth cylinders mechanically; the threads somewhat coarser, say from 2 to 50 threads to the inch, are used for cutting the ordinary screws required in mechanism; and the coarsest threads or pitches, from I inch to 7 inches rise in each revolution, are employed, in conjunction with revolving and figured cutters, for making twisted or helical works, which are also known as of the Elizabethan style of decoration. This apparatus has also the power of cutting screws at the ends of long rods, and is an extremely useful adjunct to lathes, whether they are used for plain or for ornamental

### CHUCKS FOR FIXING WORKS IN THE LATHE.

They are arranged in five groups; those used exclusively either for works in wood, or for works in metal, are designated accordingly: the others are more or less used for each of these materials and for general purposes.

Although all Lathes of the same size, say of five-inch center, have their screws exactly alike, as to diameter and thread, it is only by mere accident that the same Chuck runs truly upon two different Lathes. It is therefore highly desirable that all Chucks should be fitted to, and turned upon, the particular mandrel for which they are intended.

	HOLIZATEFIN	
No.	ATHES—DETACHED PARTS OF LATHE APPARATUS continued.  Of the Chucks, Nos. 1542 to 1593, a few requiring a secondary degree of accuracy, are sometimes supplied independently of the Lathe; and some others, requiring greater accuracy, are supplied in a modified and nearly finished state, together with instructions for their completion or adaptation by the Amateur himself. (See Notes A to E, page 35.)	
ı	(A.) FIXING CHUCKS FOR LONG OBJECTS SUPPORTED AT BOTH ENDS.  (The popit head always required.)	
ı		В.
ŀ	PRONG CHUCKS, for common and preparatory works in wood  FLANGE CHUCK WITH POINTS, for similar but larger works in wood  SQUARE HOLE CHUCKS, for many works in metal and wood, in which	В.
ľ	the centers are not required to be retained that are	В.
ľ	the centers are not required to be retained to the centers are not required to the centers.  Center on Driver Chucks, for numerous works in metal that are turned between two centers. The driver chucks require carriers variously constructed with one, two, or four screws, to cause the variously constructed with one, two, or four screws, to cause the	
Į,	mandrel, the chuck, and the work, to rotate agenrate form of the	E.
ı	above; rewarded by the Society of Arts. (See their Transactions, Vol. 47, p. 131.)	E.
ı	(B.) FIXING CHUCKS FOR LONG OBJECTS SUPPORTED AT ONE END.	
ı	(The popit head occasionally used also.)	
ı	— DIE CHUCK WITH Two SLIDES placed diametrically, for small pieces	
	not exceeding about 1 inch diameter  DIE CHUCK WITH ONE SLIDE, for works of any size below about an inch in diameter; and with a diametrical adjustment, convenient	R.
ı	for turning short works from two or more convers	E.
и	inch diameter, and which are fixed at once centrally by this chack	E.
ı	to \$ inch diameter, for fixing wires, and other pieces of those respective diameters, exactly central  Screw Chucks, with Pixching Screws. Either with four screws in two	D.
ı	Screw Chucks, with Pinching Screws. Either with four screws placed radially and in one plane, or with six or eight screw about 1 to	
ı	planes. Made of various sizes to serve for pieces from about \( \frac{1}{4} \) to 5 or 6 inches diameter, and also for irregular pieces	B.
ı	(C.) FIVING CURGES POR SHORT OBJECTS, AND FOR PLATES OR DISKS	
ı	GRASPED BY THEIR EDGES.	
ı	1.—Depending alone on the elasticity of the chuck, or of the work to be fixed.)	
	Of the objects to be chucked, which are then fixed by a few light blows. The largest wood chucks have metal flanges to fit the screw of the mandrel, the smallest have external screws to fit the brass-	
	receiving chucks. These PLAIN BRASS CHUCKS, called also Driving, or Cup-Chucks. These are used alone, for pieces of wood that have been roughly prepared with the hatchet, &c. Or the brass plain chucks are fitted with wood-stoppers, that are turned out to fit circular pieces of wood	۸.
	or metal	A.
	objects with central holes, which are driven upon the arbor chucks	D.

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HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.
No. LATHES—Detached Parts of Lathe Apparatus continued.
(C. 2.—With a small power of central contraction or expansion.)
Spring Chucks of Box-wood, with Brass Rings and Ferules The spring chucks are divided like the staves of a cask, and are turned out to fit thin and nearly-finished works, that will not bear rough usage, nor to be chucked with the hammer, as in common driving chucks, Nos. 1552 and 1553
Spring Chucks of Brass with Steel Rings, for works of definite diameters that require to be ornamented on the eccentric and other chucks
1557 — Arbors with Cones and Screws, for fixing collars, pulleys, &c.
rewarded by the Society of Arts. 1840
1559 — Yuile's Expanding Mandrels 1560 — Bell's Expanding Mandrels
(C. 3.—With a considerable power of adjustment, central or otherwise.)
1561 — SURFACE CHUCKS WITH DOGS AND SIDE SCREWS 1562 — UNIVERSAL CHUCKS, with two or four jaws, moved by leading or
clamping screws, acting independently of each other UNIVERSAL CHUCKS of different dimensions and constructions, with three slides or jaws, that are moved simultaneously, and equally to or from the center
(D.) Fixing Chucks for Objects that are pixed against One of their Surfaces.
1564 — STEEL WORM CHUCK, with a conical screw like that of a gimlet, for holding pieces of plank wood, and short thick pieces
of stop-cocks, and the small screwed parts of numerous works, in wood, ivory, metal, &c. Cylinder Bits and Taps for cutting the inside screws to correspond with the double screw abusing
out screw taps
1567 — Arbor Chucks with Nuts and Washers, for holding various works that have central holes  Arbor Chucks with Cones and Screws. These grasp less strongly
than the last, but have the nower of admeting the work contrally
DISK CHUCKS INVENTED BY PROPESSOR WILLIS, combining the adjustment for center of the chucks, No. 1568, and the strong grasp of the chucks, No. 1567. The disk chuck is convenient, amongst other uses, for fixing disks, at the time of cutting their edges into teeth for wheels, &c.
to be attached by cement
1571 — Surface Chucks with various assortments of clamps and screws for fixing works, so that their flat surfaces rest against the chuck. Additional contrivances, or vertical clamps, for holding pieces at right angles to the surface chucks. Surface chucks, which are also called face-plates, are very much required for works in metal

(E.) FIXING CHUCKS FOR DRILLS, CIRCULAR CUTTERS, &c.

1572 — DRILL CHUCKS, with round or square holes, for sets of drills and countersinks, to be used for metal and wood

p.

No. LATHES—DETACHED PARTS OF LATHE APPARATUS continued.  LATHES—Detached Parts of Lathe Apparatus continued.  13 — Boring Bit Chucks, each carrying one boring bit, such as are used	
	K.
Dan Cuncy with square hole and spring-catch, for carrying sets of	
	E.
ARBOR CHUCKS, for small circular cutters or saws, used for notching	
the bonds of screws and for other burboses = = = = " " "	E.
TRANSFER CHUCKS, to enable several of the ordinary fixing chucks	
to be used indiscriminately upon the lathe manurel, the eccentric	
chuck or any other of the chucks for ornamenting; so that the	
work may be commenced on the mandrel, and then transferred to	
any of the latter chucks, without being thrown out of truth or	
centrality	E.

## CHUCKS OR APPARATUS FOR ORNAMENTING WORKS IN THE LATHE.

### (A.) CHUCKS USED PRINCIPALLY FOR OBNAMENTING FLAT SURFACES.

	(A.) CHUCKS USED PRINCIPALLY FOR CENTAINENTING	
577 -	ECCENTRIC CHUCK of simple construction	D.
.378 -	Francis Cover of the best construction, either with Datenet and	_
	Detant on also with Serow wheel and Tangent-Bulew	D.
1579 -	Once Canon of simple construction, and without Uraduated wheel -	Ma
40 -	Over Curry of the hest construction, with Natchet or Science,	_
	mbool	E
19] -	- Combined Eccentric and Oval Chuck, used both for simple Eccen-	-
	two and for Ovel Work	E.
182 -	- COMPOUND ECCENTRIC CHUCK, for Simple or Compound Eccentric	
	Work. Of the pattern proposed and described by J. H. Ibbetson,	D.
	Fee in his work entitled "Specimens of Eccentric Turning "	D.
1583 -	"Specimens of Eccentric Turning," with illustrations. Octavo 11. 1s.	
1054 -	Compound Eccentric and Oval Chuck, for simple and compound	
	Eccentric work, and simple and compound Oval work. H. & Co.'s	E.
	Pattern	
	Few lathes have more than two of the above chucks, and the best	
1595	lathes generally have Nos. 1578, 1580, and 1584.  Geometric Chuck of Simple Construction, after the manner of	
1909	No. 1586. It serves for Eccentric patterns, for Ovals, and a	
	limited number of Epicycloidal or looped figures	E.
1596	GEOMETRIC CHUCK, of the construction invented by I. H. IBBETSON,	
	F. This about a gunerior to that last noticed, in point	
	of manifest of name of narrs, and completed sty choos, and	
	has about 40 abango whools independently of those permanonal	
	officeles 3 4- 4les abreak and makes patients with 19 24 03 21	
	looms 20 40 40 to Q4 and many others III) to 200 consecutive	
	loons in the girele Other combinations give circulating of over	
1100	aving loons	E.
1387	Additional Barrent Company movement for the addustrient of the	
	accontricity of the pattern and a case for containing the chuck,	В.
100	with mostitions for the whole of its Darre,	15.
1 23	A second and amelian abust (colled the second Darti, is sufficient	
	meit 1 to 11 Cout want and used for compoling of ubune,	
	in the compound netterns, as in the ellipsis and looped "b"	R.
1989	low numbers - lbbetson's "Brief Sketch;" a pamphlet containing several specimens	
	a pamphlet containing several special	
	of the performance of the first part of the geometric chuck 5s.	

LATHES—DETACHED PARTS OF LATHE APPARATUS continued.
1590 — STRAIGHT LINE CHUCK, with reciprocating action of improved con-
struction, in which the slide may be serewed on the mandrel or an
ordinary chuck at the time of fixing and surfacing the work
paratory to its being ornamented with rectilinear nattorns
1591 — STRAIGHT LINE CHUCKS, worked by the continuous revolution of the
lathe mandrel
(B.) CHUCKS USED PRINCIPALLY FOR ORNAMENTING CURVED SURFACES.
1500 Person Francisco Currors colled also menting Convert Surraces.
1592 — Pillar Fluting Chuck, called also pencil-case chuck, for orna-
menting the surface of cylinders, cones, prisms, and pyramids, with the revolving cutters or with the rose-engine
1593 — Spherical Chuck, for ornamenting hemispheres and other pieces
having spherical surfaces; and also some other curvilinear sur-
faces, such as convex, concave, and mixed mouldings, &c.
In the most improved Spherical Chuck, the head with the
tangent screw, is swivelled so as to be placed at all angles, to save
the necessity of employing the spherical chuck and eccentric
chuck in combination. The Spherical Chuck is used both with
fixed slide-rest tools, and revolving cutters; and as well as the
Pillar Fluting Chuck, No. 1592, is applicable to some prismatic
and pyramidal works, whether plain or ornamented
SLIDE RESTS, PRINCIPALLY FOR ORNAMENTAL TURNING IN
AND IVORY;
WITH TOOLS AND REVOLVING CUTTERS FOR THE SAME.
COTIEND TOR THE SAME.

The sliding rests, Nos. 1594 to 1598, although principally intended for wood and ivory, are sufficiently strong for small works in metal, and they are also made of 4 and 6-inch sizes.

WOOD

They have receptacle slides, intended to receive the small tools for wood and ivery Nos. 1602, the larger tools for metal 1603 and 1604, or the revolving outlers, 1605 to 1615, most of which are made of the same size, whether used for 4, 5, or 6-inch lathes, and can be supplied independently of the slide-rest.

The screws and divisions of these slide-rests are all read off in tenths

and hundredths of the inch.

The sliding rests, Nos. 1594 to 1596, may be supplied independently of the lathe, and No. 1596 is convertible into No. 1597, by the addition of the cradle. No. 1598 is a re-construction of the Slide Rest, differing in some points from the above.

### (A.) SLIDING RESTS FOR WOOD AND ORNAMENTAL TURNING.

1594 - FIVE-INCH SLIDE-REST, of simple construction, adapted only to plain turning, or such works as may be executed with small fixed tools - FIVE-INCH SLIDE REST, made principally in cast iron, with a gunmetal receptacle slide, having sliding clamps, bar, and serews, to hold small or large tools, or the several revolving cutters. The receptacle slide is moved by a lever, and has guide and stopscrews to regulate the penetration of the cutting tools - -

1596 - FIVE-INCH SLIDE REST similar to the above, but of improved construction. The main slide is longer, and of wrought iron, and has an elevating screw for adjusting the tool for height of center. The remainder of the work is constructed principally in brass and steel, and finished in the best manner

-		
04	THES-DETACHED PARTS OF LATHE APPARATUS continued.	
LA	THES-DETACHED FARIS OF LATHE AFFARALIS CONTINUES.	
147	FIVE INCH SLIDE REST similar to the last, but with a cradle and	
	additional contrivances, for setting the rest for turning surfaces	
	and cylinders; and a collar, to place the upper slide either under	
	the guidance of a leading screw, or of the lever, at pleasure	E.
	COMPOUND SLIDE REST, comprising all the above provisions, with the	
-	additional means of placing both the main and cross slides, at all	
	angles to the lathe bearers and to each other	E.
	angles to the lattle beaters and to each other	81.0
	(B.) ADDITIONAL APPARATUS TO ANY OF THE ABOVE.	
	These require to be fitted to the Slide Rest for which they are intended.	
	11000 10400 00 00 000	
99	- FLUTING STOPS, with and without screw adjustments, to determine the	
	length of traverse given to revolving drills and cutters, in fluting	
	and ornamenting works	E.
20	- APPARATUS FOR CURVILINEAR TURNING, after the method introduced	
	by F. Ronalds, Esq. In this effective apparatus, templets or	
	shaper plates are used, to govern the motion of the receptacle	
		E.
100	slide that carries the tools or revolving cutters	E.
101	- APPARATUS FOR CUTTING SCREWS AND TWISTED WORKS, by a system	
	of change wheels, that serves to connect the slide rest with the	
	mandrel of the lathe. (See Nos. 1540 and 1541.)	R.
	(C.) FIXED TOOLS FOR THE SLIDE RESTS FOR WOOD AND ORNAMENTAL	
	Turning.	
	A DAMIN'S.	
1	Commental turning	
-	- SMALL SLIDE REST Tools, for wood-work and ornamental turning,	
	made of several patterns, and also in sets of 3, 6, 9, or 12 dozen,	
	contained in trays or cases, with separate compartments	A -
1213	- Large Slide Rest Tools, for deep holes, and occasional purposes in	
	wood : and other tools for small works in metal	Α.
Seel	- CUTTER BARS, with shifting triangular blades for metal turning. (See	
	also Nos. 1620 to 1624	Α.
	(D.) REVOLVING TOOLS OR CUTTERS FOR THE SLIDE RESTS FOR	
	ORNAMENTAL TURNING.	
	The following instruments are enumerated in the order in which	
	they are generally supplied, the first being the most in requisition.	
	They are each made of two or three grades as to completeness and	
	They are each mude of two or there grades as to competitions which	
	expense, and of the same size, whether they are used for 4, 5, or 6-inch	
	center lathes.	
	All these revolving cutters require the lathe to be provided with the	
	division plate and index, and also with the overhead motion for ariv-	
	ing them from the foot wheel. The tools 1606 to 1608, should be fitted	
	to their monactions instruments.	
3	- DRILLING INSTRUMENTS in steel stems that fit the Receptacle Slides	
	of clide master Near 1505 to 1508	Α.
1	Drills for the same for perforating wood and metal	E.
1	Drills for the same for pertorating wood and metal — Drills for the same, of about 40 different patterns or figures, for orna-	Die
	brins for the same, of about 40 different patterns of figures, for other	E.
1	menting work	E.
A	Bent and side cutters for the drilling instrument	E.
1	ECCENTRIC CUTTING FRAME, made to apply to the drilling meta-	
	ment, or to act independently of the same	В.
1	UNIVERSAL CUTTING FRAME in which the cutters may be made to	
	revolve in the vertical the horizontal, and any intermediate plane.	1
	The instrument is constructed either with a toothed wheel and	
	pinion, or with guide-pullies	A.
1	VERTICAL CUTTING FRAME, a more simple and compact instrument	1
	than the above, but adapted to the vertical position only	Α.
	with the above, but adapted to the vertical position only	1 44.0

13 În

0

LATHES_DETACHED PARTS OF LATHE APPARATUS continued.
CLO HONGOVERY CHENING BRAME, WILL LIFEC Spinules and guide-pulles.
The one spindle used with small culters; another with regu-
1 11do mont tools and for large diameters, not exceeding lour
in the third spindle is used with circular cutters, for cutting
the teeth of wheels grooves, and other small works in metal
Transport Cumpany Eptage either added to the drilling instrument.
N. 1605 on constructed independently = = = = = = = =
1614 — Currens that apply in common to the Vertical, Universal, Horizontal,
and Internal cutting frames
and Internal cutting Hantes  Compound Eccentric Cutting Frame on a new construction, invented by R. O. C. Newenham, Esq., which applies to the sides  vented by R. O. C. Newenham, Esq., which applies to the sides
and ends of cylinders, prisms, curved figures, &c., after the same
Morroy or Drilling Frame, on the suspension or other
plans, suitable to driving the revolving cutters by means of the
foot-wheel of the lathe
AVVV II AAVV
SLIDE RESTS PRINCIPALLY FOR METAL TURNING,
WITH TOOLS AND REVOLVING CUTTERS FOR THE SAME.
(A.) SLIDE RESTS FOR METAL TURNING.
1617 - SLIDE RESTS FOR METAL TURNING, made very long and strong in the
alidae and with Professor Willis's tool-holder. Dy willou the
may he inclined at any angle. When made of the land and
serve to turn works of the following dimensions:
Those for 31 4. 5. 6. 7-inch latties
Are adapted to surfaces of 7, 8, 10, 12, 14 inches diameter.
Are adapted to surfaces of 7, 8, 10, 12, 14 inches diameter.  — cylinders of 5, 6, 8, 10, 12 inches long.
Thay may be set to every angle for thrilling comes " " "
1618 — SLIDE RESTS FOR 5 & 6-INCH LATHES, similar to the above, but somewhat lighter, and of a little less range in the slides. They are
furnished, if required, with a receptacle slide and lever movement,
intended to receive the various revolving cutters. Nos. 1000 to 10101
so that the same slide-rest may be used, either for orwing more
turning or for ornamental turning in wood and ivory
Approximate Bon CHTTING SCREWS AND TWISTED WORKS, DY & CT.
tem of change wheels to connect the slide-rest with the mandrel of
the lathe. (See Nos. 1540 and 1541.)
(B.) FIXED TOOLS FOR THE SLIDE-RESTS FOR METAL TURNING.
1620 - PLAIN SLIDE-REST TOOLS of the usual forms, and of various degrees
COURSED BARG SHIPPING TRIANGHLAR BLADES, IOF the general
square and angular thicads, so that the soul H and Co's nattern
exact rake or inclination of the thread. H. and Co.'s pattern -
1624 — Cutter Bars with Shifting Cutters for Internal Screws with square and angular threads
(C.) REVOLVING CUTTERS FOR THE SLIDE-RESTS FOR METAL WORK.
1625 — Apparatus for Cutting the Teeth of Wheels of almost every
kind, and for cutting grooves. The spindle to be worked either by

N.B.—The marginal letters A, B, C, D, E, refer to notes on page 34.

HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.	
LATHES—Detached Parts of Lathe Apparatus continued.  a band alone, or by wheel and pinion movement for greater power. Cutters to order, either circular for grooving, to be followed by straight cutters for rounding the teeth; or circular cutters, for cutting and rounding the teeth at the same time	C. C.
hensive and useful arrangement Daiving Grar for the above apparatus, of various kinds, to serve either for the foot-wheel of the lathe, for a hand fly-wheel to be turned by an assistant, or for other power	C.
turner by an additioning or tor turner power a to a to a to	17,
MISCELLANEOUS LATHE APPARATUS.	
Boring Collar, for boring out long works that require the holes to be accurately central; used also in boring or turning tubular pieces	
that are too long to be supported by the mandrel alone Guides for Slender Turning, and back stays of various constructions, for supporting works that spring from the tool, when held only between the mandrel and front center. This apparatus is	В.
generally constructed in connexion with the boring collar LIFTING PIECES of wood or iron, to raise the five-inch lathe one, two, or three inches, and additional holding down bolts, to serve for turning occasional works not exceeding sixteen inches diameter. These parts are made in the same proportion for larger or smaller	В.
lathes  LENGTHENING BARS, OR LENGTHENING BEARERS, variously constructed, so that the lather may be made to serve for occasional world, so that the lather may be made to serve for occasional to the length of these to which it would be	C.
works, of nearly twice the length of those to which it would be otherwise applicable -  OVERHEAD MOTION or drilling frame, on the suspension plan and other constructions, to serve for driving the revolving cutters, Nos.	C,
1605 to 1615, intended for wood, ivory, and ornamental work - OVERHEAD MOTION, and driving gear of various kinds, suitable to the	C.
revolving cutters for metal work, Nos. 1625 to 1627 Back Rests, affixed to lathes for the support of the person when at work. This assistance is commonly used by turners in soft wood, to	C.
give them a steady position when at work	C.
MISCELLANEOUS LATHE APPARATUS FOR THE DIVISION OF CIRCLES INTO EQUAL PARTS.	
DIVIDING PLATES of all diameters for lathe mandrels, and drilled with circles of holes for dividing circles into various numbers	
	C.
Common Indexes, and Sliding or Adjusting Indexes to the above - Dividing or Counting Index, to prevent errors in using the division	U.
MICROMETER INDEX, for fine adjustments, and for interpolation, or for the production of numbers which are not aliquot parts of the	C.
divisions on the dividing plate	C.

No.
LATHES—DETACHED PARTS OF LATHE APPARATUS continued.
1640 - Compensating Index, for the equal division of the ellipsis, invented
by J. H. Ibbetson, Esq.; being an appendage to the drilling and
cutting apparatus
1641 — DIVIDING ENGINE, for the lathe mandrel; constructed with a worm
wheel and tangent screw, and either with various micrometers, or
ratchet-wheels, for producing the principal divisions of the circle -
1642 DIVIDING ENGINE, with worm wheel, tangent screw, and sets of
change wheels. The most complete of these apparatus are so
arranged, that all numbers below 1000 (with the exception of the
arranged, that all numbers below 1000 (with the exception of the
few prime numbers above 61, and the multiples of these primes
by 2, 3, 4, &c.), are obtained rapidly, and without risk of error,
17 7 months of a stan wheel Webler of the
generally by one exact revolution of a stop wheel. Tables of the
settings for divisions below 500, are furnished with the apparatus
1643 - Segment Engines of different kinds, for various works, consisting of
arcs of circles
1644 LUND'S Vertical Sawing Machine. (See No. 1822.)
,
N. D. Hills was and and Statement D. C. D. H. restors to make an income of

N.B.—The marginal letters A, B, C, D, E, refer to notes on page 34.

N.B.—The marginal letters A, B, C, D, E, refer to notes on page	34.					
-	1 1	From	1		To	
No. 1645 MACHINES, ENGINES, AND TOOLS, for Boring, Drilling,	£	8.	d.	£	8.	4.
Grinding, Sawing, Screw-cutting, Shaping, Planing, Turning, Wheel cutting, &c. See Boring, Drilling, &c.  1646 — Machines, Engines, and Tools, of any kind differing from those specified, made to drawings or models.  1647 MALLETS of beech-wood and hard-wood, for joiners, turners, and others; some of them with metal ferules to add to their weight — Each 1648 MARQUOIS'S SCALES. (See Drawing Instruments, No. 1295.) 1649 MEASURING INSTRUMENTS, in very great variety, are de- tailed under the following heads:—namely,	0	1 10	6 0		10 18	0 1
Bevils. Callipers. Compasses. Dividers. Drawing Instruments. Plumb Bobs. Gages. Rules. Spirit Levels. Squares. Squares. Straight Edges. Tape Measures, &c.						
1650 MEASURING TAPES, from 20 to 100 feet long Each 1651 — Measuring Tapes as above, with turn-over handles and	0	5	0	0	15	1
rollers; some of them with multiplying wheels to hasten the winding up Each	0	7	6	1	4	
1652 — CHESTERMAN'S AND BOTTOM'S Patent Wire Tapes, from 20 to 100 feet long, with metallic wires woven into the tapes, to prevent their elongation Each		10	0	1	10	(
1653 — Chesterman's Spring Tape Measures, from 3 to 6 feet long, mounted in brass, electrum, ivory, tortoiseshell, and silver	0	4	0	1	10	4
1654 MINERALOGICAL HAMMERS. (See Geological Instruments, Nos. 1396 to 1401.)	0	4	6	0	10	-
1655 MITRE BLOCKS for sawing and planing, and also joiner's Shooting Boards Bach	U	6	0	0	15	(
1656 MODELLING AND CARVING TOOLS, in great variety, for works in clay, cork, ivory, marble, the metals, pasteboard, plaster, stone, wax, wood, &c., supplied either separately, or in sets to order The set	0	10	0	4	0	-
1657 MORDAN'S CENTRAL WIRE CHUCK, rewarded by the Society of Arts. (See No. 1549.) 1658 MORTARS of hardened steel, for Lapidaries and Seal Engravers. (See No. 1234.)		1	0	1	18	
A. S.						



	_					
	1	From	1		To	
N.	£	8.	d.	£	8.	d.
No. 1659 MUSICAL STAMPS, or CHARACTERS, for engraving or						
punching the pewter plates from which music is generally			- 1			
punching the power passes that which the said	1	10	0	9	1.0	0
printed - The set	Ţ		0	3		0
1660 NEEDLES, Packing Needles Each	U	0	2	0	()	4
Inhoisterers'	U	0	6	0	1	()
NETTING VICES, and various others, to affix to the Table, with						
a variety of useful appendages and contrivances, that are			- 1			
a variety of useful appendages and constitutions, share are	0	0	n	1	241	0
also useful in making Fishing Flies Each	V	2	-0	1	10	0
1663 NEWENHAM'S (R. O. C., Esq.) Compound Eccentric Cut-			- 1			
TING FRAME. (See Lathe Apparatus, No. 1615.)						
1664 NICHOLLS'S improved hooks and eyes for catgut bands. (See	1		- 1			
No. 1462.) The Set	0	2	3	0	7	()
WALLOT TOOL : Tool in the few injunes use (See No. 1146)	1	10	0		10	0
1865 NICHOLLS'S improved cramp for joiners' use. (See No. 1146.)		10	V	0)	10	U
1666 NICHOLSON'S centro-linead. (See Drawing Instruments, No.	l_					
1666 NICHOLSON'S centro-linead. (See Drawing Instruments, No. 1306.)  1667 NIPPERS for wire, of various forms and sizes The pair	1	8	0	N	12	0
1667 NIPPERS for wire, of various forms and sizes The pain	0	2	0	0	4	6
1008 - Nail Nippers, with curved blades for the dressing-case. (See			i			
The main	n	4	6	0	8	0
Cutlery, No. 1219.)	0					
Cutlery, No. 1219.) The pair	U	5	0	0	12	0
NUTS: Retel nuts. Corosos or vegetable ivory nuts, and Coquina	l.					
nuts, used in turning The dozen	0	2	0	0	6	0
MIL NUT CRACKERS of Steel or Plated (See Cutlery, No. 1220.)	1					
The man	0	2	6	0	9	()
The pair					-	
1672 O'BRIEN'S substitute for the centro-linead. (See No. 1307.)	U	12	U	Ä	0	()
1973 ODONTAGRAPH, an instrument for setting out the teeth of						
wheels, invented by the Rev. Prof. Willis. (See No. 2066.)			- 1	0	5	0
18 OIL FOR MACHINERY and Brick Oil for Landaries The bottle	0	2	6	0	5	0
1874 OIL FOR MACHINERY, and Brick Oil for Lapidaries The bottle	0					
Oil Cans and Pins, with spouts or with capillary tubes Each	U	1	G	0	2	6
1996 OILSTONES, Turkey and common oilstones, with or without cases	3					
of beech or mahogany Eucl	0	5	0	1	5	0
1677 — Oilstone slips, for sharpening gouges and moulding tools with	1					
Francisco State of St	0	- 1	0	0	2	6
curvilinear edges Each			U		- 4	0
1678 PAINTER'S TOOLS. (See Glazier's Tools, No. 1406 to 1415. 1679 PARALLEL RULES. (See Drawing Instruments, No. 1296.)	1		^			
PARALLEL RULES. (See Drawing Instruments, No. 1296.)	0	2	0	, 1	10	()
1600 PARALLEL VICES for the Table. (See Vices, Nos. 2042 and	1					
1680 PARALLEL VICES for the Table. (See Vices, Nos. 2042 and 2043.) 1681 PARING KNIVES with eyes, used for preparing wood for Tur	1	10	0	6	0	0
PADING UNITED 14 and wood for processing wood for Tun	1				-	
TARING KNIVES with eyes, used for preparing wood for Int		7	0	1 0	10	4.
ners and others Euc.  PEN MAKING INSTRUMENTS. (See Cutlery, No. 1221.)  PENTAGRAPHS for drawing, &c. (See Nos. 1289 and 1290.)  PINCERS, cutting, joiner's, saddler's, shoemaker's, upholsterer's	U	7	0		10	6
PEN MAKING INSTRUMENTS. (See Cutlery, No. 1221.)	Įl.	0	0	. 1	16	0
PENTAGRAPHS for drawing, &c. (See Nos. 1289 and 1290.)						
184 PINCERS autting joiner's saddler's shoemaker's uphoisterer's						
and other Pincers The pai	- 0	- 1	6	0	7	6
like Diviling Transfer and for	, '	-	~	"	- "	
PINKING IRONS, for scolloping linen, paper, &c., and for			0	0	1.5	
making artificial flowers	3 0	1	6		15	0
PIN TONGS, or Sliding Tongs, serving as small hand-vices Each	t 0	2	6	-0	4	6
3, 52						
	-			1		
PLANES for joiners, cabinet-makers, &c., in great variety.	1			1		
The state of the s				1		
(A DI-was for Sameraines on Rough Diemas)				1		
(A.—Planes for Surfacing, or Bench Planes.)				1		
68 - 1 1 m						
Jack Planes from 12 to 17 inches long, with cast steel double	e					
irons Eac	h 0	4	6	0	5	0
Panel, trying, long and jointer planes, from 12 to 30 inche	8					
long, with cast steel double irons Each	100	) 5	10	10	9	0
and the with the rect double from				!		
Smoothing Planes, with cast steel double irons, from 2 to	2 6		1.0	10	5	0
		) 3	10	) C	9	V
Smoothing planes of smaller sizes, of beech and box-wood	191					
generally with single irons, for tool chests, modellers, &	e. (	) 2	. {	5] (	7	U
0 11 11 11 11 11 11 11 11 11 11 11 11 11						

-12

HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE,	1014	E+			
No.	Fre			1)	`
PLANES continued. (B.—Planes for Rebates, Grooves, &c.)	€ 8.	. d	£	8. (	i.
(D.— Families for Teconomy Crosses)					
1692 — Rebate planes from I to 2 inches wide, with square or skew					
irone Bach	) 2	6	0	3	6
1602 Standing Fillisters or those not possessing the power of 2d-					
justment Each			0		i
justment - Each 1694 - Moving Fillisters, with adjusting slips and stops	) 6	9		10	6
1695 - Sash Fillisters, of several constructions	17	0		19	0
1695 — Sash Fillisters, of several constructions ————————————————————————————————————	) 5	6	0	1	li.
1697 - Slit-deal Planes, for grooving and tonguing deal boards,			١.		
for partitions and flooring - The pair  1698 — Slit-deal Planes of improved kind, with 3 pairs of irons, for			0	6	6
1698 — Slit-deal Planes of improved kind, with 3 pairs of irons, for				12	7
			0	13	Ø.
1699 — Ploughs, with 6 and 8 irons, and of various constructions.					
used for grooving and rebating works, whether straight	9 4		1	16	٥
or circular	1 2	5 U	, ,	16	
1700 — Routing Plane, called also Old Woman's Tooth, used with the	0 1	. 9	1 0	2	3
plough irons, for sinking recesses, inlaying, &c Each	U J	r 2	1	-	J.
1701 — Rounders, or planes with two handles, for rounding wooden rods and poles, from \(\frac{1}{2}\) to 2 inches diameter \(\circ\) - Each	n (	2 6	0	7	6
rods and poles, from 1 to 2 inches diameter - 22000	0 4	£ (			
(C.—Planes for Mouldings.)			-		
			1	,	6
1702 — Astragal Planes, of various sizes Each			) (		
1703 Bead Planes	0	3 2	. (		
1703 — Bead Planes — The pair 1704 — Hollows and rounds, from 1/16 to 2 inches — The pair 1704 — Hollows and rounds			.1	4 1	
			ľ	4 4	
1706 Oree Planes for the mouldings known as the Cyma recta.	^	0 1	2 1	0 7	6
and Cyma reversa Each  1707 — Sash Bar Planes The set	0			0 10	
1707 — Sash Bar Planes The set	O O			0 10	
	U	J '		0 10	
There are many additional Planes of each of the kinds A. B.C.,			1		
several of which are employed for compass or curvilinear			-		
works, as by Coachmakers, Hand-rail makers, and others.					
Detailed lists of the whole may be had on application.					
(DPlane-irons, or Loose Cutters for Joiners' Planes.)					
(D1 tune-1/0103) 0. Double Canton of the Control			i		
1709 Plane irons for single or double iron bench planes, made of			1		
cast steel, and from 1 to 3 inches wide Each	0	0	6	0 2	0
1710 - Plough irons of cast steel, in sets of 8 The set				0 1	- 61
1711 - Rebate irons assorted, below 2 inches Each	0	0	3		) (
cast steel, and from 1 to 3 inches wide Each 1710 — Plough irons of cast steel, in sets of 8 The set 1711 — Rebate irons assorted, below 2 inches Each 1712 — Moulding plane irons, left soft, and not figured	0	0	3	0 1	1 0
(E.—Iron Planes.)			,		
1713 - Mitre planes, smoothing planes, trying planes, and rebate			1		
planes for joiners, constructed principally in iron, with steel					
soles. Also Silcock and Lowe's patent planes of various					
kinds, made in malleable cast-iron; namely, the double			-		
fillister, the fluting or grooving plough, the dado grooving			1		
plane, the trying plane, and the moulding or bead plane			0	3	5 ()
plane, the trying plane, and the moulding or bead plane (Described in the Mechanic's Magazine, 1844, p. 86) Each	0 1	10	U	0	
1714 —— Iron planes for smiths, machinists, mathematical instrument					3 0
makers and others, for planing metals Each	Z	2	1	U	
			1		
PLANING BENCHES of beech-wood, framed, together with			1		
screw-bolts; namely:-					
1715 - Planing Benches, with two side screws and loose chap, for					
holding pieces by their sides or edges; one iron sliding			-		
bench-hook, and one wooden planing stop, and also			0	6	0 (
drawer for tools: 4 feet, £4; 5 feet, £5; 6 feet, £6.	4	0	U	47	

HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE,	18	44.					
	F	rom	1		To		
PLANING BENCHES continued.	P	8.	d.	€		w.	
1716 — PLANING BENCHES as above, with the addition of an end	_						
1716 PLANING BENCHES AS ADOVE, with the addition of the order							
screw and two bench-hooks, for grasping by their ends			- [				
pieces of wood not exceeding 2, 3, and 4 feet long	c	0		٥	0	0	
respectively: 4 feet, £6; 5 feet, £7 10s.; 6 feet, £9	6	0	U	3	0	U	
PLANING BENCHES as above, with the further addition of a			- 1				
sliding case of 8 drawers, with partitions, all secured with							
one lock, and a sliding cover to the well, to adapt the							
banch to receive a full assortment of tools: 4 feet, £10:			-				
5 foot \$12 · 6 feet £14	10	0	0	14	0	-0	}
PLANING BENCH, 6 feet long, of the last or most complete							
description, with a full assortment of 186 various tools,							
for joiners' work, cabinet work, and general purposes.	j						
(First of restants on application) - Complete				42	0	0	
(List of contents on application.) Complete				7 10	·		
1719 — Planing Bench as above, in mahogany, and with more			- 1	50	10	0	)
highly thushed tools, nandled in hard-wood " Composite				04	7.0	V	,
PLANING ENGINES, OR MACHINES for planing metal;							
made of different degrees of size and strength, and with a							
variety of apparatus for fixing the objects to be planed.							
PLUMB BOBS of various kinds, some with shifting centers for							
the neeket	·	2	0	0	6	(	)
21 POCKET OR TRAVELLING TOOLS, made with tangs of uni-	1						
form size to fit the socket handles, No. 1445; namely							
brad-awls, broaches, drills, chisels, files, gimlets, gouges							
hammers, rasps, saws, screw-drivers, &c. &c Each	0	1	0	0	- 3	. (	6
Pocket travelling tools selected from the above, and from		-					
rocket travelling tools selected from the above, and its							
various other tools not requiring handles, arranged in	1	10	0	4			n
leather pouches, in sets of from 12 to 48 tools		10	U	-3			
23 Pocket travelling tools as above, arranged in smal	4 1	16	۵	1			а
mahogany cases The se	6 1	19	0	1 4	1	È '	U
- Pocket travelling pads, each having a brass socket, with	T.						
side screw, and a handle of hard-wood, nollowed out t	וט			١.		_	
contain the tools Eac.	3 0	15	0		L '	U	U
1725 POLISHING POWDERS of all the usual kinds, and polishin	g						
stones in squared pieces; namely, blue and grey stones	,						
water of Avr or snake stones, and others.	- 1						
FOLISHING CASES of mahogany, containing 5 canisters with	h						
polishing powders, 5 bottles with lackers, Dutch rus	1.						
brushes, linen, flannel, &c Eac	'n				2 1	0	0
PRESSES of various kinds; namely, presses for Copying letter	9.						
Fly progress Printing Rolling	7.			1			
presses for Embossing, Fly-presses, Printing, Rolling	27						
and Seal-presses to order.	1			1			
Cowper's parlour printing presses. (See Appendix B. p. 69	2						
PROPORTIONAL CALLIPERS AND COMPASSES. (So	3 0	10	- (	0	4 1	4	G
Drawing Instruments, Nos. 1268 to 1273.) East	10 0	10	•		Z ,		0
				2			
				1			
PRUNING AND GARDENING TOOLS :-							
Avernostors or a species of shears, mounted on poles s	X			1			
feet long, and used for cutting off small branches. The	ne						
one part of the instrument is formed as a hook to conta	in						
the branch; the moveable blade is kept distended by	a						
envine and in almost in the act of outting by a strop	32			-}			
spring, and is closed in the act of cutting by a strong catgut line running down the handle, which latter may	be						
catgut line running down the nandie, which latter may	3						
extended if required by an additional joint, as in	ch	10	)	0	2	0	0
fishing-rod	of						
Bill-hooks, of patterns used in different counties, and	ch (	) !	5	0	0	12	()
Various sizes with handles of wood, huck-norm, a.c.	070	1					_
A NIVES for hudding of many patterns, both in suraigns a	I AND IL		2	6	0	7	0
Clasped handles	010			4	0		~
Knives for grafting, with ivory stops to determine the dep of the incision	450		4	0	0	99	6
of the incision Ed	62/2	1			12	4	

11 1<sub>3</sub>

			1	-	_	
No.		rom			To	
PRUNING AND GARDENING TOOLS continued.	£	8. (	6 2		8. d	
1735 — Knives for pruning, with straight or curved blades, and in straight or clasped handles. The last have sometimes a						
straight or clasped handles. The last have sometimes a						
	0	2	6	0	-	
1736 — Knives for pruning, of the pattern used in Madeira; and						
also Vine-dressers' knives Each	0	3	6	0	G	и
			1			
1737 — Saws for pruning, 12 to 24 inches long, like the narrow or compass saws used by joiners — Each 1738 — Saws for pruning, 8 to 12 inches long, with double teeth, and with buck-horn handles — — — Each 1730 — Saws for pruning, mounted on long, poles, the blades fixed	0	1	6	0		
compass saws used by joiners	V	.7	0	U	1	
1738 —— Saws for pruning, 8 to 12 inches long, with double teeth,	0	200	0			
and with buck-horn handles Each	U	7	6	()	10	1
1739 —— Saws for pruning, mounted on long poles, the blades fixed			1			
at a slight inclination, and with the teeth inverted, so as			1			
to cut in the downward or pulling stroke Each	0	7	0	0	9	0
Comment of patting plants - The nair	0	2	0	U	7	u
1740 — Scissors of various patterns for trimming plants - The pair		-	1			Ω
1741 - Scissors for gathering nowers and grapes, the blades of	1		No.			
which are made to cit as scissors, and also to now as		n	-	0	20	vI
pliers The pair	U	3	6	1)	1	6
1742 — Scissors for gathering grapes and flowers, similar to the last,			1			
so as to cut and hold, but mounted on long sticks, and						
actuated by a catgut, after the manner of the averun-						
actuated by a category, after the manner of the main	0	10	6	0	13	н
cators; No. 1731 The pair	V	10				
1743 Shears for Druning, made somewhat after the manner of	1					
ordinary seissors, but with one part very short and with			-			
a keen convex edge, the other part formed as a hook, to			- 1			7
retain the branch from slipping away - The pair	0	6	0	0	10	8
1744 — Shears for pruning, similar to the above as to the cutting	1					
5 Shears for pruning, similar to the above as white						
blade and hook, but formed with straight handles, united						
by a sliding joint, so as to act with a drawing cut, more	1		- 1			
resembling that of a knife, which action is less injurious	3			0	14	0
to the plants Ine pair	. 0	9	0	U	14	v
1745 - Shears; trimming shears for hedges, &c., made like large	,					
scissors or tailors' shears, and with wooden handles from	1					
The new	0	6	0	0	8	6
one to three feet long The pair	1					
1746 - Shears for borders, with long bent handles, and with or	10	10	0	n	12	0
without rollers to rest upon the ground The past	10	10	U			
1747 - Spuds and weed-hooks of several forms, intended to be	,			()	-	
mounted upon long sticks Each	0	5	()	0	3,	
1748 —— Sets of pruning implements; consisting of a saw and various	3					
other tools, made to fit one handle with a socket and spring	1					
Other tools, made to lit one handle with a socker and spring	in	14	0	1	10	IJ,
catch, and contained in leather pouches The se	10	1 4				
1749 - Sets of pruning implements, with screws to adapt them to an		10	0	1)	111	- 1
iron socket fixed at the end of a pole The se	U	10	0			
1750 - Pouches and cases fitted up to order, with selections of the	3					
pruning and garden tools specified, and any others made	3		- 1		0	1
to order Eacl	1	10	0	4		
DO OLIGOT.	1/2	0	.7	()	()	-
1751 PUNCHES for brads and nails	10		()	()	1	- 1
1750 Punched for tumon connergmithe We	0	5	1,	13	6	
1753 — Punches for paper, cloth, gun-wadding, &c.	-10	0	()	17		
1754 - Punches for similar materials of larger diameters, made with	1					
steel rings and iron centers to order.						
1755 —— Punches for chasers, music engravers, type founders, &c.						
1756 QUARM'S bevilling instrument for joiners. (See No. 1028.)	5					
1757 RAOUIL'S French files, from 3 to 7 inches long, the teeth of	110	1	()	U	3	
which are cut by machinery. (See No. 1364.) - Each	10	1	4	ľ		
1758 RAZORS and razor-strops. (See Cutlery, Nos. 1176 to	0					
1185.)						
1759 RINGS FOR KEYS. The rings are embossed to order with	1				2	
Por	60	0	4	(	)	
names and addresses	1			1		
1760 ROBISON'S (the late Sir John) workshop or howitzer blow-pipe	11.2	0	0	1 4	0	
(See No. 1037.)	2		6		7	
1761 — Robison's geological naminers. (See No. 1397.) "	-["		()			
1762 - Robison's curvilinear files. These files are cut whilst flat	3			1		

ROBISON'S CURVILINEAR FILES continued.

and are afterwards bent or channelled, so as to present one convex and one concave side. (Rewarded by the Society of Arts, 1843. See No. 1365.)

73 RONALD'S (F., Esq.) apparatus for curvilinear turning. (See Lathe Apparatus, No. 1600.)

1704 ROSE ENGINES, constructed on that principle in which the mandrel, during its revolution, rocks sideways, under the guidance of ro-

settes, or figured plates, fixed on the mandrel.

The mandrel frame is mounted on a joint, and is pressed sideways by a spring, until the rosette comes in contact with a rubber, or fixed point, which causes the mandrel frame to recede at every projection of the rosette; the fixed tool then traces on the work an undulating line, having the same character as that of the particular rosette employed. At other times the mandrel frame is temporarily fixed, and the rosette causes the mandrel to reciprocate endways, through its collars, which action is sometimes called the pumping motion.

1765 - Rose Engine, with cast-iron mandrel frame, twelve inches high from the fixed centers to the mandrel; with two levers to fix the mandrel frame at the time of chucking and plain turning; and two spiral springs contained in brass boxes, for giving the rocking and

pumping motions.

The mandrel works in gun-metal collars, has a wooden pulley, and a barrel with eighteen rosettes, having patterns of different numbers and forms, and three extra resettes in halves. The mandrel has also a dividing plate and detent, that are used in working patterns, for shifting the rosettes the half, third, or fourth parts of their respective figures.

Two rectangular bars of steel are fixed parallel with the mandrel on cast-iron brackets, and are fitted with carriages that grasp the fixed rubbers against which the rollers act. Four steel rub-

bers for the rosettes.

A right angled slide rest, and three dozen tools for the same. The above mounted on a strong frame of beech-wood, secured by screw bolts, an iron fly wheel with elevating apparatus and treadle for the same, also a hand-motion to connect the fly wheel and man-

- Rose Engine as above, with the following extra apparatus; namely, three additional rosettes in halves, division plate with endless screw, and an oblique movement to the mandrel. Also an eccentric chuck, and an oval chuck - - - - - -

Rose Engine, with cast-iron mandrel frame, twelve inches high from the fixed centers to the mandrel; with two brass levers steeled in front to fix the mandrel frame at the time of chucking and plain turning; and three spiral springs contained in brass boxes, for giving the rocking and pumping motions. The springs have tan-

gent screw adjustments to regulate their tension.

The mandrel is hardened, bored throughout, and works in hardened steel collars fitted on a sliding socket; six steel screw guides, and the appropriate apparatus for cutting screws. The mandrel has two barrels, together containing eighteen rosettes, having patterns of different numbers and forms, and six extra rosettes in halves. The one barrel has a dividing plate and detent, that are used for shifting the rosettes the half, third, or fourth parts of their respective figures. The other barrel has a tangent screw adjustment, for finer subdivisions, and to enable the two barrels to be used conjointly in making compound figures.

Two triangular bars of steel are fixed parallel with the mandrel, on brass brackets, and are fitted with carriages that grasp the 6xed rubbers against which the rosettes act. Four ivory rubbers

£ s. d.

No. ROSE ENGINES continued.			
AVVII TATULATIO CONSCIONO	0	-	-
for the rosettes, four steel rubbers, and four steel rubbers with	£	4.	d.
steel rollers.  A compound sliding rest to fix parallel with, and at right angles			ı
to the mandrel, and also at other angles; six dozen tools for the			
same contained in a mahogany case; and six steel rubbers fitted to the front of the tool slide, to regulate the penetration of the tool in			
irregular works of metal.			
Oval chuck, eccentric chuck, and oblique motion.  The above mounted on a strong frame of mahogany, having a			
case with drawers secured with one lock, iron fly wheel, elevating			
apparatus, and treadle for the same; also a hand motion, with sliding spindle and elevating apparatus; the whole finished in a			П
very handsome manner	330	0	0
1768 ROSE ENGINE APPARATUS, any of which may be added to the above.			П
1769 — Cylinder popit head with centers and flange, and common rest with			ı
tees; to be used when the mandrel is simply employed as that of			П
a common lathe, for chucking and surfacing the works to be rose engine-turned.			
1770 — Triangular bar fixed to the mandrel frame with three separate appa-			
ratus; namely, a cylinder popit head, a spring popit head, and a sliding guide, to be severally used with the oscillating movement of			ı
the rose engine, in ornamenting long and slender works.			
1771 — T formed rubbers of different curvatures for working interrupted			
figures, and shallow figures from deep rosettes; also a shifting rubber carriage to enable these rubbers to be fixed to the side bars.			
1772 — Micrometer rubber for working compounded and vanishing figures.			
1773 — Rosettes in halves for small diameters. 1774 — Rosettes in halves for polygonal figures.			Н
1773 — Rosettes in naives for compound ngures, or those with primary and			П
secondary curves, &c.  1776 —— A division plate in halves, and sliding index.			
1777 —— Segment engine and stop.			П
1778 — Chucks of the usual kinds for fixing works.  1779 — Chucks of several kinds for ornamenting work; namely, the Com-			П
pound oval and eccentric chuck; Ibbetson's Geometric chuck,			П
Straight-line chuck, Pillar-fluting chuck, Spherical chuck, &c.			
1780— Revolving cutters for the slide rest, and nearly all the apparatus that are added to lathes of the most complete kind.			
			Į
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to	0	9	t)
	0	9	t)
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to		To	0
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 —— Box-wood rules, 1 foot long, with common or arched joints, £ s. d.	£	To	d. 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 —— Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches —— Each 0 1 6		To	d. 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 —— Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — — — — — — — — Each 0 1 6.  1784 —— Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — — — — — — — — — — Each 0 1 9	£	To	d. 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 — Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — Each 0 1 6 1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — — Each 0 1 9 1785 — Box-wood rules, 2 feet long, from ½ to 1 inch wide, folding	£	To	d. 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 — Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — — — — — Each 0 1 6  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — — — — — — Each 0 1 9  1785 — Box-wood rules, 2 feet long, from ½ to 1 inch wide, folding into 6 inches — — — — — Each 0 2 6  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12	0 0	To	d. 6 6 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 —— Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — — Each 0 1 6.  1784 —— Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — — — Each 0 1 9.  1785 —— Box-wood rules, 2 feet long, from ½ to 1 inch wide, folding into 6 inches — — — Each 0 2 6.  1786 —— Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — — Each 0 3 0.	£ 0 0 0 0	To 8. 4	d. 6 6 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 — Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — Each 0 1 6  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — Each 0 1 9  1785 — Box-wood rules, 2 feet long, from ½ to 1 inch wide, folding into 6 inches — Each 0 2 6  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — Each 0 3 0  1787 — Ivory rules, 1 to 4 feet long, with common or arch joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6	0 0 0 0 2	To 8. 4 4 7 8 10	d. 6 6 6 6 6 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 — Box-wood rules, 1 foot long, with common or arched joints, folding into 3 inches — Each 0 1 6.  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — Each 0 1 9.  1785 — Box-wood rules, 2 feet long, from \( \frac{1}{2} \) to 1 inch wide, folding into 6 inches — Each 0 2 6.  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — Each 0 3 0.  1787 — Ivory rules, 1 to 4 feet long, with common or arched joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6.  1788 — Ivory rules as above, with silver arch joints — 0 10	0 0 0	To 8. 4	d. 6 6 6 6 0 0
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 — Box-wood rules, 1 foot long, with common or arched joints, £ s. d. folding into 3 inches — Each 0 1 6  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — Each 0 1 9  1785 — Box-wood rules, 2 feet long, from ½ to 1 inch wide, folding into 6 inches — Each 0 2 6  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — Each 0 2 6  1787 — Ivory rules, 1 to 4 feet long, with common or arch joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6  1788 — Ivory rules as above, with silver arch joints — 0 10 0  1789 — Whalebone rules, 2 and 3 feet long, folding into 3 inches, suitable to measuring curved as well as straight objects, fitted	0 0 0 0 2 3	To 8. 4 4 7 8 10	d. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 — Box-wood rules, 1 foot long, with common or arched joints, folding into 3 inches  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches  1785 — Box-wood rules, 2 feet long, from 1/2 to 1 inch wide, folding into 6 inches  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches  1787 — Ivory rules, 1 to 4 feet long, with common or arch joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6 1788 — Ivory rules as above, with silver arch joints  1789 — Whalebone rules, 2 and 3 feet long, folding into 3 inches, suitable to measuring curved as well as straight objects, fitted in cases for the waistcoat-pocket. French pattern. Each 0 4 6	0 0 0 0 2 3	To 8. 4 4 7 8 10 0	d. 6 6 6 0 0 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS—  1783 — Box-wood rules, 1 foot long, with common or arched joints,  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — Each 0 1 6  1785 — Box-wood rules, 2 feet long, from ¼ to 1 inch wide, folding into 6 inches — Each 0 2 6  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — Each 0 3 0  1787 — Ivory rules, 1 to 4 feet long, with common or arch joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6  1788 — Ivory rules as above, with silver arch joints — 0 10 0  1789 — Whalebone rules, 2 and 3 feet long, folding into 3 inches, suitable to measuring curved as well as straight objects, fitted in cases for the waistcoat-pocket. French pattern. Each 0 4 6  1790 — Stationer's rules, 1 to 4 feet long, of box-wood, with brass edges — Each 0 4 0	0 0 0 0 2 3	To 8. 4 4 7 8 10 0	d. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
1781 ROUTLEDGE'S engineer's rule. (See Slide Rules, No. 1792.) 7s. 6d. to  1782 RULES OF NUMEROUS KINDS— 1783 — Box-wood rules, 1 foot long, with common or arched joints, folding into 3 inches — Each 0 1 6.  1784 — Box-wood rules, 2 feet long, with 1 joint, as above, folding into 12 inches — Each 0 1 9.  1785 — Box-wood rules, 2 feet long, from \( \frac{1}{2} \) to 1 inch wide, folding into 6 inches — Each 0 2 6.  1786 — Box-wood rules, 3 and 4 feet long, folding into 6, 9, and 12 inches — Each 0 3 0.  1787 — Ivory rules, 1 to 4 feet long, with common or arch joints of brass, or electrum, folding into 3, 4, 6, and 9 inches Each 0 5 6.  1788 — Ivory rules as above, with silver arch joints — 0 10.  1789 — Whalebone rules, 2 and 3 feet long, folding into 3 inches, suitable to measuring curved as well as straight objects, fitted in cases for the waistcoat-pocket. French pattern. Each 0 4 6.  1790 — Stationer's rules, 1 to 4 feet long, of box-wood, with brass	0 0 0 0 2 3	To 8. 4 4 7 8 10 0	d. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6

	HOMPANIA				-		Mar
92 —	OF NUMEROUS KINDS continued. Sliding rules generally 2 feet long, and with boxwood, brass, and ivory slides, divided into inches and parts; divided also logorithmically, and stamped with various tables; namely, the Soho, Routledge's and Hawthorn's slide rules for engineers; and other slide rules for the several purposes of auctioneers, carpenters, ironmongers, surveyors, timber measurers, &c Each Rules and scales of various kinds for drawing. (See Drawing Instruments, Nos. 1291 to 1301.)	£	3.	d.			6
194 SAW	VS in great variety.  (A.—Taper Saws mostly without Frames.)						
195	Cross cut and felling saws, 4 to 8 feet long Each	1	0	0	2	5	0
1.7	Long, pit, or whip saws; also frame and felloe saws, 4 to 8 feet long - Each Tillers, boxes, and frames to the above saws, various.	1	0	0	2	5	0
1798 —	Rip, half-rip, and hand saws, 22 to 30 inch, with beech handles Each	0	6	0	0	7	6
799	Fine hand saws, panel, and fine panel saws, 20 to 26 inch,		5	6	0	6	3
1000	similar to the above, but with finer teeth Each Chest saws for small tool chests, 8 to 20 inch, with handles		4	6	0	7	6
-01	of beech, boxwood, ebony, and rose-wood Each Table saws, and compass or lock saws, 8 to 26 inch, with						
1002	narrow taper blades, and beech handles Each Keyhole, or fret saws, 6 to 12 inch, without handles Each	0	0	6	0	3	6
1003	<ul> <li>Keyhole saw pads, or handles for the last, of box-wood and rose-wood, with brass sockets and side screws - Each</li> </ul>	4	2	0	0	3	6
	(B.—Parallel Saws with Backs.)						
1994 —	Tenon and sash saws, 14 to 20 inch, with iron or brass	3			0	12	0
j —	backs, and beech handles Each Carcase and dovetail saws, 6 to 12 inch, with iron or brass	3	5	6		13	
i	backs, and beech, box, or rose-wood handles Each - Smith's screw head saws, 3 to 8 inch, with narrow blades	, 0	6	0		10	0
	iron or brass backs, and straight wooden handles Each		2	6	0	5	0
	(C.—Various Parallel Saws used in Frames.)						
1:07	- Mill saw blades, of various widths, thicknesses, and lengths	,					
114	Frame saws, 18 to 30 inch, with wide blades and wood frames for joiners, wood-cutters, chair-makers, and others Each	50	8	0	0	12	0
.) —	- Frame saw blodes for the above	- 0	4	6	-	444	0
,	Turning or sweep saws, 6 to 24 inch, with narrow blade and wood frames  Turning saw blades for the above  Turning saw blades for the above	10	4	6			0
	TAOLA SERMA THE PO DO HIGH MILL MICE DIRECTLY PROPERTY.	_	0	6			
3	Steel frames, with or without tightening nuts Lac.	- 0	6	0		-	0
	steel frame saws for metal, 5 to 14 men, with hone		2	6	0	6	6
5 -	- Smith's frame can blades for the above	- U	0	3	-		0
1-	- Piercing and buhl saw frames, of steel and wood - Lac-		1	6		-	6
10 mag	- Circular saws of various diameters; namely— 3 4 5 6 7 8 10 12-inch diam	1.	_			2 (2	
	3s.6d. 4s.6d. 5s.6d. 6s.6d. 7s 6d. 9s. 13s. 16s. Each		3	6	L	16	0
	14 16 18 20 24 28 32 36-inch diam 20s. 24s. 30s. 36s. 48s. 66s. 88s. 120s. Eac		0	0	) 6	0	0

Windows Salar

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and a subminicance, and the

	1				
No.	A.	rom	7		To
1819 SAW MACHINES of various kinds, and others to order.	L	8.	u.	Ł.	8.
(A Reciprocating Saw Machines.)					
( zeo-pi outing Daw zizumites.)	1				
			-		
1820 CROSS CUTTING SAW MACHINE, for firewood, made after the			1		
pattern of the machines used in France, America, &c.	8	0	0 ]	4	U
1821 — VERTICAL SAWING MACHINE, for blades from 12 to 20 inches					
long, mounted on benches, with treadle, elevating spring,				٠	
and various guides, for sawing parallel, bevilled, and		^	0.0		
1822 — Lund's Vertical Sawing Machine, with shorter and nar-	14	0	0,2	10	0
rower blades, mounted on a frame, with foot-wheel,					
treadle, and guide pulley, &c. Intended for smaller works					
than the last, and especially for arbitrary curves, such as					
are met with in fret work, inlaving, &c.	R	0	0 1	4	0
1823 — WILLIS'S VERTICAL SAWING MACHINE, for purposes similar			Ĭ		
to the last, and also driven by the foot-wheel. This					
machine requires to be mounted on the frame of a foot-					91
lathe, grinding machine, or circular saw machine	5	0	0	8	0 (
/D (V)			1		
(B.—Circular Sawing Machines.)					
1824 - Spindles 12 to 24 inches land for sixual and land					
1824 —— Spindles, 12 to 24 inches long, for circular saws below one					
foot diameter, to work between steel centers; each spindle has a flange, socket, and nut	î	0	0	1 1	6
1825 —— Saw Spindle, 12 inches long, as above, with 3 saws, from 4	4	v.	-	2 1	"
to 8 inches diameter: mahogany platform for the same.					
to 8 inches diameter; mahogany platform for the same, with guide for sawing parallel pieces; mounted on a			ш		
mahogany box or frame, to fit the bearers of ordinary			1		
toot-lathes	4	0	0	5	0
1826 —— SAW MACHINE, with a spindle and 6 saws, from 4 to 8 inches					
diameter; iron platform planed true on the face, with			1		
guide to prevent the deviation of the saw, guide for			1		
parallel pieces, and guide or protractor for angular pieces. The platform is binged to an iron casting, that					
pieces. The platform is hinged to an iron casting, that			1		
receives also the center screws for the spindle, and an			Ì		
elevating screw to determine the projection of the saw, as in cutting rebates. This machine may be mounted on any					
convenient bench, and driven by any accessible power			1.	1	0 1
1827 —— Saw Machine, No. 1826; mounted on a frame of beech-			1		
wood, with plain wheel, neither japanned nor polished -			11	3 1	0
1828 —— SAW MACHINE, No. 1826; mounted on a frame of mahogany,					
with bevil-wheel, japanned and polished			20	) (	0
1829 — GUIDES TO THE ABOVE machines for sawing mosaic works in					
wood; and guides for sawing prisms, pyramids, and					
various pieces requiring two obliquities, such as models			1	; (	1
of the geometrical and crystallographical solids i	5 (	) (	1	,	
1830 — Saw Machines resembling No. 1826, but on a larger and			1		
stronger scale, for saws from 6 to 12 inches diameter - SAW MACHINES of common construction, for sawing fire-			-		
			1		
benches, or the fly-wheels by which they are driven	0 (	) (	23	) (	0
			-		
of gun-metal or steel, with fast and loose pulleys, flanges,			-		
nuts, &c. and also large sawing machines of different					
kinds made to order			1		
1833 SAW PADS for keyhole saws, with brass or electrum sockets,			1		
and two side screws; handled in box-wood, ebony, or rose-			) (	1 5	, 1
Wood Each to	2	; (	1	,	
1834 SAW SETS, for setting or bending the teeth of saws; made of	,	-	1	) ,	2 6
different patterns, also with and without handles - Each	1				

	HOLTZAPFFEL AND CO. S GENERAL CATALOGUE,	10	TT.				_
			rom	1		То	
		£	8. 6	Z. 3	£ .	8. 0	l.
135	SCALES OF EQUAL PARTS, ruled on card-board. (See						
	Appendix C. page 70.) 1s. 0d. each, 9s. 0d. the dozen.  SCISSORS. (See Cutlery, Nos. 1186 to 1203.) - The pair  SCRAPERS for joiners, with and without handles - Each  Triangular scrapers, for engravers and others - Each		_				
136	SCISSORS. (See Cutlery, Nos. 1186 to 1203.) The pair	0	1	0	2		0
137	SCRAPERS for joiners, with and without handles Each	0	0	4	0	1	2
19	Triangular scrapers, for engravers and others	0	2	0	0	3	0
. 19							
	on stool with a man and a man and a factors	10	2	6	0	4	6
-10	Scratch brushes, made of strips of the material prepared for						
	carding or combing cotton-wool, fixed on wooden handles	U	2	0	0	3	0
				1			
20 4 2	SCREW CUTTING APPARATUS of various kinds.						
MI	SUREW COTTING ATTAINED OF VALUE AND ADDRESS OF THE SURE OF THE SUR						
	(A.—Screw Boxes for Cutting Wood Screws.)						
		0	4	6		0	
104	Screw boxes of hard wood, a to a inch, London made Edon	0	4 5	6	0	6	6
Wa.	2 — Screw boxes of hard wood, $\frac{1}{8}$ to $\frac{2}{4}$ inch, London made $Each$ 3 — Screw boxes of beech-wood, from $\frac{2}{4}$ to $2\frac{1}{4}$ inch, with handles	U	5	0	1	FO	0
		1		i			
	(B Screw Plates and Screw Stocks for Metal Screws.)	1					
	a v. 1. a. T. Director and of marions			ĺ			
194	Screw plates and taps of Lancashire make, and of various		0	_			
10.	sizes, for watch-makers, and general artizans - Each	0	2	6	1	0	0
194	Screw plates, of large size with two handles, intended for	١, ١					
10.	common works Each	1	0	0	2	0	0
184	6 — Screw stocks, fitted up after the manner of pliers, to be used						_
10.	with the lathe Each	1	0	0	2	0	0
191	7 - Screw stocks of H. and Co.'s manufacture, 6 inches long						
	and case hardened; with 4 pair of dies, fitting in double						
	chamfers, 12 taps, 2 tap wrenches, all contained in a				4	0	0
	mahogany case Complete	1			5	0	0
	Nine-inch diestock as above				6	0	0
	7 — Twelve-inch — — — — — — — — — — — — — — — — — — —	i			8	0	0
	Sixteen-inch				10	0	0
	Twenty-inch Twenty-inch				12	0	0
	Screw stocks of Birmingham, Lancashire, French, Geneva						
	and other manufacture	1	0	0	6	0	0
	Taps and dies, &c., of all diameters, and of any number o	F					
	threads to the inch, made to order.						
	Screw tools for the lathe; the set of 12 pairs, shallow or						
н	deen of H and Co's ordinary threads The 86	ŧ			1	10	0
4	deep, of H. and Co's ordinary threads The se Screw tools as above, (See Nos. 2013 and 2014.) The pair	0	-1	10	0	3	9
	SCREW CLAMPS for joiners and others. (See Cramps, Nos.						
	1144 40 1142 \	41. U.H	5	6	2	10	0
	SCREW DRIVEDS in beach handles for joiners Each	0 8	1	0	0	4	0
	- Somore deinesse in heard bondlog poorly inighed -	- 0	1	6	0	6	0
	OVALW W DENCHES on cooch proposed of common kind	-11411	3	6	0	6	0
		-0	7	6	1	2	θ
ľ	ocrew wrenches of H. and Co.'s pattern, some of which ar						
			4	0	1	12	0
г	" SURIBING TOOLS for timber merchants, joiners, and others	9					
b	with or without tape measures attached to them - Each	10	3	6	0	10	6
r	" SEAL ENGRAVERS' ENGINES, and moulds for casting th	В					
D	grave quills, or the shanks of the engraving tools.						
ı	quills, or the shanks of the engraving tools. (See No. 1643.)						
	SEWING PRESSES for bookbinders. (See No. 1038.)		-		_		0
	Hand shears, from 3 to 8 inch The pai	TO	1	9			6
	SHEARS. Hand shears, from 3 to 8 inch The pai	- 0	7	6	0	18	0
	and shears and seissors, in great various.	10.4		C	0	15	0
L	SHANDIG 1740.)	1 2	3	6		10	0
1		10	C	0	0		0
	SHOOTING BOARDS, and mitre blocks for joiners - Eac	relu	U	C	1 0	10	

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		i	1	Fron	20		To
No.	CITATORIC of management binds noticed and of the state of the	12	£	8.		£	8.
1872	SKATES of numerous kinds, patent and others, including	the					
1089	Oxford, Cambridge, and the Skating Club patterns The	pair	0	7	6	1	10
1873	SLIDING CENTERS, made in steel, with inverted cones i	rom					
	½ to 1 inch diameter; used for marking the center round pieces of metal or wood, before drilling the ce	8 of					
	round pieces of metal or wood, before drilling the ce	nter					
	holes, by which the pieces are fixed in the lathe, for						
	purpose of being turned 1	Each	0	6	0	0	111
1874	- Sliding centers, with brass cones from 1 to 3 in	ches			}		
	diameter 1		0	8	0	1	U
1875	SLIDING RESTS of various kinds, principally intended for w						
	and ornamental turning; together with tools and rev	rolv-					
	ing cutters for the same. (See Detached parts of Lat	thes,					
	Nos. 1605 to 1616.)						
1876	SLIDING RESTS, principally intended for metal turning; t						
	ther with tools and revolving cutters for the same.	(See					
	Nos. 1617 to 1628.)	`					
1877	SLIDING TONGS, 4 to 6 inch, with straight or cross ch	aps,					
	used after the manner of pin and hand vices 1	Sach	0	2	6	0	4
1878	SOCKET HANDLES, with brass sockets, having each a	rec-			-		
	tangular mortise and side screw, for awls, chisels,						
	saws, turning tools and numerous other instrume						
	which are made with tangs of corresponding size, for						
	sake of portability	Each	0	4	6	0	5
1879	sake of portability	side					
	screws, for files, with tangs of the customary forms I	Rach	0	3	6	0	7
1880	- Socket handles, with spring sockets of brass, and						
	screws as above, for sliding rest tools and others	Euch	0	7	0	0	8
1881	SOLDERING APPARATUS. (See No. 1376.)				0	2	15
	SPINDLES for circular saws, and various machinery for		_				
2002	same. (See Sawing Machines, Nos. 1824 to 1832.)	4110					
1883	SPIRIT LEVELS, 6 to 14 inch, mounted in wood A	Cach	n	3	0	0	7
1884	Spirit levels, 6 to 14 inch, in wood, plated with brass	20070	ň	4	0	0	12
1885	— Spirit levels, 5 to 12 inch, accurately made in brass,	with					
1000	adjusting screws; the frames either plain or boxed	Tach	n	12	0	2	')
1886	SPRING DIVIDERS on spring compagged 2 to 9 inch		n	2	0		3
1887	Spring dividers as above 3 to 8 inch bright		n	2	6	0	5
1882	Spring dividers as above, 3 to 8 inch, bright with club points or cones. (See No. 11	25 \	n	2	6	0	6
1880	SPOKESHAVES of various kinds; namely:—	00.	V	- 07	1		
1000	Englischemes common of basels would be Charle I	Z-no2	0	1	2	0	2
1000	plated with breeze	sacra			6	0	3
1001	plated with brass		B	î	10	0	3
1002	plated with Ivory		O O	9	8	0	4
1093	plated with brass plated with brass with screws to the irons with double-edged irons of box-wood and hard wood, various irons various, separately		0	3	0	0	5
1004	of how wood and hand was decisions		()	1	8	0	6
1000	or box-wood and nard wood, various		1	n	5	0	1
1004	SOULADES of many kinds namely -		0	V	3		
1031	SQUARES of many kinds, namely:—	- 1					
	(A Comment for Tales)						
	(A.—Squares for Joiners.)						
1000	Toinan's common 2 to 10 inches with at 111 1						
1999	Joiner's squares, 3 to 18 inches, with steel blades, and he	aru-	3	1	6	0	Ps.
1000	wood stocks E	acn		i	9		q
1899	Joiner's squares, 3 to 18 inches, plated with brass		)	4	0'	()	
1900	Joiner's squares, 6 to 12 inches, with spirit levels			2	6	0	ń
1901	Mitre squares, 8 to 12 inches, various		3	4	1		
	/D G / /D				-		
	(B.—Squares for Turners and General Mechanists.)						
3000	C				ĺ		
1902	Common smith's squares, 18 to 24 inches, cut out of sl	neet		1	6	()	17
1000	iron, and stamped with inches	ach	J	I	1		
1903	- Best squares, 1 to 6 inches, made of hardened steel,	and		2	:1	0	-
	very accurately finished E	achi	3	4	4		

	HOLTZAPFFEL AND CO. S GENERAL CHIMOGOCO		, x x v				_
		,I	From	. 1.		To	
1(1-1)	UARES continued.	£	8, 0	1	5	8.	d.
MIT.	Rack squares, I to binenes, similar to the last, but with thin				^	10	
200	etaal backs riveted on	U	4	0	0	10	6
465	Back squares, 1 to 6 inches, with steel blades, and thick	0	4	_	^	10	0
	backs of brass or steel riveted on Each Triangular steel squares, 1 to 6 inches	0		0	-	10	6
lui	Triangular steel squares, 1 to 6 inches	0	2	6	0	7	0
	Turner's squares, with sliding places, 4 to 5 menes -	0	0	9	0	16	0
908	Set squares for the slide rest				U	TO	U
909	Squares with steel backs riveted on, and serving also for	0	16	0	1	0	0
	the angles of 30. 4h. and hij degrees. French panton	10	10	٧	-	U	U
910	Squares of various kinds for mechanical drawing. (See Drawing Instruments, Nos. 1302 to 1305.) Each	0	5	6	2	10	0
	Drawing Instruments, Nos. 1302 to 1303.)	1			-	10	0
	Larger squares of all these and other kinds made to order.						
	Larger squares of an inese and other winds made to or dor.			1			
	STAKES for clock and watchmakers, coppersmiths, tinmen, and						
211	others, intended to be fixed in the vice, in the bench, or in						
	wooden blocks Each	0	2	6	2	10	0
10	STAMPS for cutting out artificial flowers, and paper labels, made						
314	to order of any required patterns Each	0	1	6	0	12	0
1619	Stamps for marking books, paper, wood, ivory, metal, &c.						
19.19	with cyphers, crests, coats of arms, or other devices.						
101.4	Stowns with single letters or figures, for wood, Ivory, and						
	motel in cote of 36 not exceeding 4 men night, including	4		1			
	the complete alphabet and figures The se	1	0	0	1	12	0
1915	Stamps with single figures, in sets of 9, as above -	-0	5	0	0	9	0
-16	- Stamps with single letters and figures, from \( \frac{1}{4} \) to I inch high						
1917	Stamps with initials or names, and addresses to order.						
1918	- Stamps for type founders, and engravers of music, to order						
19010	STANDS of cost iven of a tripod form for tail vices, Dresses, CC	- 1		Ì			
_()	STEELS for sharpening knives, plain or fluted, and variously	y					
	STEELS for sharpening knives, plain or fluted, and variously handled. (See Cutlery, No. 1225.)	10	2	6	0	6	0
1921	SITH AS with any number of Dir. for fullers, plante-104	~					
	makers, smiths, and others, (See Nos. 1050 to 1050.) Eac.	15 0	16	0	2	10	0
1922	STOCKS with dies and tans. (See Screw Apparatus, 1908, 104	±		_	10		0
1000	to 1854.) The se	2 1	0		12 1	5	
1923	STIDNES Transport of the page 1 with on without cases 200	CORT.	5	0:	0	2	
1924 100r	slips for gouges Eac	10	1	U	U	-	0
DIZ)	Charnley Forest, Water of Ayr, Welch and rub stones	22					
	and other stones for sharpening tools, and for polishin	5	0	2	0	3	0
1000	metals, &c Eac	a	U	4	U	U	
4160	STRAIGHT EDGES of steel, from 6 inches to 60 inches	h n	8	0	5	0	0
.927	long, and accurately finished Eac		O	V			
1000	- Radial Strongth advoc for Filling lines conversing to a conversi	9		6	0	10	6
17	required for dividing Eac STROPS FOR RAZORS. (See Cutlery, No. 1184 and 1185.)	0	2	6		15	
100	STRIKING KNIVES for joiners and cabinet makers - Each	ho	0	6	0		
1930	TAPE MEASURES of several kinds, namely, ordinary tap	e		Ť	-		
1	measures with rollers and turn-over handles; Chester	e-					
	man and Bottnu's patent wire tapes; Chesterman	's					
	patent spring tapes, &c. (See Measuring Tapes, No	8.					
	1650 to 1653.) Edu	th (	) 4	0	1 1	. 10	) (
3]	TAPS AND DIES. (See Screw Apparatus, Nos. 1844 to 1854	.)[					
13:	Taps and screws made of every diameter, length, and threa	d,			1		
	to onder	- 1					
133	TIMBER SCRIBERS plain in common wood handles; all	50			1		
	fitted as pocket-knives, with various blades; and likewing	se					
	with tone magazines	186	1	6	(	1:	5 (
134	* TOULS FOR RIASTING roots of trees, contained in case	8.					
le.	(See No. 1032.) The s	et			2	2 1:	2 6
133	(See No. 1032.) The state of th	11-			1		
	ing, Grinding, Sawing, Screw cutting, Shaping, Planin Turning, Wheel cutting, &c. See Boring, Drilling, &c.	g,			1		
	Turning, Wheel cutting, &c. See Boring, Drilling, &c.						
	J. J.						

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			O	
No. 1936 TOC	V. CHESTS IN VE	RV CREAT VAL	PIETY	8.
1930 100	nrincinal arouns	TEL GILLIAI VAI	arranged in four	
	The Tool Cheste	manufactured has H	and do managed a	
	range as to size co	mnleteness and erner	nye : mamely from Mr. 100"	
	the Ten-inch Tool	Theet of deal maine	50 intended for any	
	tlemen to No 1976	the Thirten-eir-ine	h Tomore' Tool Obest	
	271. 10e intended.	for amateure on men	estical man	
	The tools are of	eigee meanantiamed to	the Cheete and and in	
	case selected with a	ment came from those a	made for auticana	
	Any of the conte	nte are amitted ar ere	handed to mit the miles	
1936 TOOL CHESTS IN VERY GREAT VARIETY, arranged in four principal groups.  The Tool Chests manufactured by H. and Co., present a very wide range as to size, completeness, and expense; mamely, from No. 1937 the Ten-inch Tool Chest, of deal, price 18s., intended for young gentlemen, to No. 1976, the Thirty-siz-inch Joiners' Tool Chest, price 271. 10s., intended for amateurs, or practical mem.  The tools are of sizes proportioned to the Chests, and are, in every case, selected with great care from those made for artizons.  Any of the contents are omitted or exchanged, to suit the wishes of purchasers, and the prices of the Tool Chests are modified accordingly.  (A.)—Tool Chests from 10 to 24 Inches Long, for the Use of Amateurs.  Ten-inch Tool Chest, of deal, with one Tray, containing the following Tools; namely:—  2 Brad-awls 2 Gimlets 1 Rasp 1 Brad-punch 1 Hammer 1 Saw 1 Chiese 1 Pair of pincers Screws, nails, &c.  The Chest of Deal, the Tools handled in Beech-wood ———————————————————————————————————				
	par orangors, and mo	process of the 2000 One	are are moverfree accoraingly.	
	(A )_Toor Curers a		ZG LANG FAD MEN HON AN	
	(A.)—IOUL CHESIS I		is Long, for the use of	
	1	TEN-INCH TOOL CHI	est.	
1937 ——	Ten-inch Tool Chest,	of deal, with one Tra	ay, containing the following	
	Tools; namely:—			
		1 Mallet	1 Screw-driver	
		1 Pair of pincers	Screws, nails, &c.	
	The Chest of Deal, 1	the Tools handled in	Beech-wood 0	13
1938 —		of Deal, with one T	Iray, containing the follow-	
		1 Uilstone	1 Serew-driver	
		Lair of compass	ses Screws, nans, ac.	(
	The Onesi of Deal, (I	ie 100is nandied in	Beech-wood	
		TEN-INCH TOOL CH	Demo	
1020	M M 1 CV 4			
1939			n one Tray, containing the	
	2 Brod awla	2 Cimleta	1 Dain of compages	
	1 Bred nunch	1 Course		
		1 Hamman		
		1 Mallot		
			Comoura pails &c.	
	The Chest of Birch n	rood the Tools bend	Blad in Booch wood	1
1940	The Chest of Mahore	room, the Tools hand	ned in Beech-wood	1(
		my, and 10015 mandi	ed in Tiata wood	
	Т	VELVE-INCH TOOL C	LYBOTO	
30.13				
1941	the following Tools	lest, of Birch-wood,	with one Tray, containing	
			D. in of compagges	
	2 Brad punches	4 Cimlet	1 Pair of compacts	
	1 Cutting punches	1 Countries	1 Pair of pincers	
	2 Chicola a manual	1 Gouge		
	Z Unisels; namely,	1 Hammer		
	The Tool Chests manufactured by H. and Co., present a very wild range as to vize, completeness, and expense; namely, from No. 1937 the Ten-inch Tool Chest, of deal, price 15s., intended for young gentlemen, to No. 1976, the Thirty-siz-anch Joiners' Tool Chest, price 27l. 10s., intended for amateurs, or practical mem.  The tools are of sizes proportioned to the Chests, and are, in every case, selected with great ourse from those made for artizans.  Any of the contents are omitted or exchanged, to suit the wishes of purchasers, and the prices of the Tool Chests are modified accordingly.  (A.)—Tool Chests from 10 to 24 Inches Long, for the Use of Amateurs.  Ten-inch Tool Chest, of deal, with one Tray, containing the following Tools; namely:—  2 Brad-awis 2 Gimlets 1 Rasp 1 Brad-punch 1 Hammer 1 Saw 1 Chisel 1 Mallet 1 Screw-driver 1 File 1 Pair of pincers Screws, nails, &c. The Chest of Deal, the Tools handled in Beech-wood —			
				16
1049	The Chest of Makes	roou, the Tools hand	led in Decemend	(
1342	The Chest of Manoga	my, the Tools handle	d in Hard wood	

	HULIZAFFEL ANI	O. S GENERAL C	1011.	
No No	F	THE PART OF CARE	rmo	£ s. d.
		RITEEN-INCH TOOL CHES		
: 43	Fourteen inch Tool Ch	est, of Birch-wood, w	un two Trays, contain-	
	ing the following Too	4 Gimlets	1 Pair of flat pliers	
	4 Brad-awls 2 Brad-punches	1 Gouge	1 Plane	
	1 Cutting-punch	1 Hammer	2 Rasps	
	3 Chisels; namely,	1 Hatchet	2 Saws; namely,	
	2 Firmer chisels	1 Mallet	1 Hand saw	
	I Chisel for metal	1 Oilstone	1 Compass saw	
	1 Crow-iron	1 Pair of compasses	2 Screw-drivers	
	9 Files	1 Pair of pincers	Screws, nails, &c.	
	The Chest of Birch-wo	od, the Tools handled i	n Beech-wood	2 2 0
1944	- The Chest of Mahogan	y, the Tools handled in	Hard-wood	2 10 0
		CH TOOL CHESTS, WIT		
.05	- Fourteen-inch Tool Ch			
110	Trave containing th	e following Tools; nan	nely:-	
	4 Brad-awls	1 Hammer	3 Rasps	
	2 Brad-punches	1 Hand-vice	l Rule	
	1 Cutting-punch	1 Hatchet	3 Saws; namely,	
	4 Chisels; namely,	1 Mallet	1 Hand saw	
	3 Firmer chisels	1 Oilstone	1 Compass saw	
	1 Chisel for metal	1 Pair of compasses	1 Saw for metal	
	1 Crow-iron	1 Pair of pincers	2 Screw-drivers	
	3 Files	1 Pair of cutting pliers	1 Spokeshave	-
	4 Gimlets	1 Pair of shears	1 Square Screws, nails, &c.	
	2 Gouges	1 Plane od, the Tools handled	in Beech-wood	3 3 0
1946	The Chest of Birch-wo The Chest of Mahogan	v the Tools handled in	Hard-wood	3 13 0
1010				
1047	Six	TEEN-INCH TOOL CHEST	two Tways containing	
191/	- Sixteen-inch Tool Che	et, of Biren-wood, with	two frays, containing	
	the following Tools;		3 Rasps	
	4 Brad-awls	1 Hammer 1 Hand-vice	1 Rule	
	2 Brad-punches	1 Hatchet	3 Saws; namely,	
	1 Cutting-punch 4 Chisels; namely,	1 Mallet	1 Hand saw	
	3 Firmer chisels	1 Marking point	1 Compass saw	
	1 Chisel for metal	1 Oilstone	1 Saw for metal	
	1 Crow-iron	1 Pair of compasses	3 Screw-drivers	
	3 Files	1 Pair of pincers	1 Spokeshave	
	4 Gimlets	1 Pair of flat pliers	1 Square	
	2. Gourge	1 Plane	Screws, nails, &c.	2 2 0
1010	The Chest of Birch-we	ood, the Tools handled	in Beech-wood = = -	3 3 0
1918	<ul> <li>The Chest of Mahogan</li> </ul>	ly, the Tools handled i	n Hard-wood	3 13 0
	SIVIPPN-IN	TOOL CHESTS, WITE	DRAWER.	
1949	- Sixteen-inch Tool Che	st. of Birch-wood, with	one Drawer and three	2
	Trays, containing th	e following Tools; nat	mely:-	
	6 Brad-awls	1 Hand-vice	1 Smoothing plane	
	3 Brad-punches	1 Hatchet	3 Rasps	
	2 Cutting-punches	1 Mallet	1 Rule	
	I Chalk-line & reel	1 Marking point	3 Saws; namely,	
	4 Chisels; namely,	1 Oilstone	1 Hand saw 1 Compass saw	
	3 Firmer chisels	Pair of compasses	1 Iron-back saw	
	l Chisel for metal	1 Pair of pincers		
	1 Crow-iron 4 Files	1 Pair of cutting pliers 1 Pair of flat pliers	3 Screw-drivers	
		1 Pair of shears		
	6 Gimlets 3 Gouges	2 Planes; namely,		
	2 Hammons	1 Jack plane	Screws, nails, &c.	
	The Chest of Riveh w	ood the Tools handled	in Beech-wood	- 4 4 0
160 -	- The Chest of Mahoga	ny, the Tools handled	in Hard-wood	- 5 5 0
		V 7		

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No.	Eig	HTEEN-INCH TOOL CHE	STS.
1951 —	- Eighteen-inch Tool C	Chest, of Beech-wood,	with one Drawer and
	three Trays, contain	ning the following Tools	; namely:-
	6 Brad-awls	1 Hatchet	1 Smoothing plane
	3 Brad-punches	1 Mallet	4 Rasps
	2 Cutting-punches	1 Marking point	1 Rule
	1 Chalk-line & reel	1 Oil-can	4 Saws; namely,
	5 Chisels; namely,	1 Oilstone	1 Hand saw
	4 Firmer chisels 1 Chisel for metal	1 Pair of compasses 1 Pair of pincers	1 Compass saw 1 Iron-back saw
	1 Crow-iron	1 Pair of pincers 1 Pair of cutting pliers	1 Saw for metal
	4 Files	1 Pair of flat pliers	1 Scraper
	6 Gimlets	1 Pair of round pliers	
	3 Gouges	1 Pair of shears	1 Spokeshave
	2 Hammers	2 Planes; namely,	1 Square
	1 Hand-vice	1 Jack plane	Screws, nails, &c.
	The Chest of Birch-wo	ood, the Tools handled	in Beech-wood
1952 —	— The Chest of Mahogan	y, the Tools handled in	Hard-wood
	Tw	ENTY-INCH TOOL CHEST	'S.
1953 —	- Twenty-inch Tool Che	st, of Birch-wood, with	one Drawer and three
	Trays, containing th	e following Tools; nam	nely:—
	8 Brad-awls	1 Mallet	1 Smoothing plane
	4 Brad-punches	1 Marking point	4 Rasps
	2 Cutting-punches	1 Oil-can	1 Rule
	5 Chisels; namely,	1 Oilstone in case	5 Saws; namely,
	4 Firmer chisels 1 Chiselfor metal	1 Oilstone slip 1 Pair of compasses	1 Hand saw 1 Compass saw
	1 Crow-iron	1 Pair cutting nippers	
	6 Files	1 Pair of pincers	1 Iron-back saw
	8 Gimlets	1 Pair of cutting pliers	
	1 Glue-pot and brush		1 Scraper
	4 Gouges	1 Pair of round pliers	
	2 Hammers	1 Pair of shears	1 Spokeshave
	1 Hand-vice	2 Planes; namely,	1 Square
	1 Hatchet	1 Jack plane	Screws, nails, &c.
2071		od, the Tools handled i	
1954	— The Chest of Mahogar	ny, the Tools handled in	Hard-wood '
	TWEN	TY-TWO-INCH TOOL CH	ESTS.
1955	- Twenty-two inch Tool	Chest, of Beech-wood,	with one Drawer and
		ing the following Tools	
	1 Brace and 12 bits	1 Hatchet	1 Smoothing plane
	8 Brad-awls	1 Mallet	4 Rasps
	4 Brad-punches	1 Marking point	1 Rule
	2 Cutting-punches 1 Chalk-line and reel	1 Oil-can	5 Saws; namely,
	7 Chisels; namely,	1 Oilstone in case 1 Oilstone slip	1 Hand saw 1 Compass saw
	6 Firmer chisels	1 Pair of compasses	1 Dovetail saw
	1 Chisel for metal	1 Pair cutting nippers	1 Iron-back saw
	1 Crow iron	1 Pair of pincers	1 Saw for metal
	8 Files	1 Pair cutting pliers	1 Scraper
	8 Gimlets	1 Pair of flat pliers	4 Screw-drivers
	1 Glue-pot and brush	1 Pair of round pliers	1 Spokeshave
	4 Gouges	1 Pair of shears	1 Square
	2 Hammers	2 Planes; namely,	Screws, nails, brads,
	I Hand-vice	1 Jack plane	&c. &c.
1056	The Chest of Birch-wo The Chest of Mahogan	od, the Tools handled in	n Beech-wood
	- The Chest of Manogan	v. the Loois nandled in	Part-wind " "

HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.	
	£ 8. d.
TWENTY-FOUR-INCH TOOL CHESTS.	
Twenty-four inch Tool Chest, of Birch-wood, with two Drawers a	nd
three Trays, containing the following Tools; namely:	
1 Reach vice 1 Hand-vice 1 Jack plane	
1 Brace, and 18 bits 1 Hatchet 1 Smoothingpla	ne
12 Brad-awls 1 Mallet 6 Rasps	
6 Brad-punches 1 Marking point 1 Rule	
3 Cutting-punches 1 Oil-can 5 Saws; namely, 1 Chalk line and reel 1 Oilstone in case 1 Hand saw	
Chair line and leer 1 Chairman and 1	
7 Chisels; namely, 1 Oilstone slip 6 Firmer chisels 1 Pair of compasses 1 Chisel for metal 1 Pair cutting nippers 1 Pair of nincers 1 Saw for meta	
1 Chisel for metal 1 Pair cutting nippers 1 Iron back say	ig
	1
8 Files 1 Pair cutting pliers 1 Scraper 12 Gimlets 1 Pair of flat pliers 6 Screw-drivers	
12 Gimlets 1 Pair of flat pliers 6 Screw-drivers	
1 Glue-pot and brush 1 Pair of round pliers 1 Spokeshave	
6 Gouges 1 Pair of shears 1 Square	
	10 10 0
The Chest of Birch-wood, the Tools handled in Beech-wood The Chest of Mahogany, the Tools handled in Hard-wood	12 12 0
The Chest of Manogany, the Tools named in Trate-wood	-15 15 0
B.) Tool Chests of Mahogany, from 14 to 24 inches long, with	
Tools inlaid, for the use of Amateurs.	
	-1
- Fourteen-inch tool chest of mahogany, with one tray, the to	018
handled in hardwood, and neatly inlaid in separate compartment	3 13 6
and the chest French polished	5 5 0
Fourteen-inch tool chest, with one drawer, as above Sixteen-inch	- 6 6 0
Eighteen inch	- 7 17 6
- Twenty-inch	-10 10 0
Eighteen-inch Twenty-inch Twenty-two-inch	- 12 12 0
Twenty-two-inch Twenty-four-inch	- 14 14 0
	1
C.) Tool Chests from 24 to 36 inches long, for Household Use,	
AND GENERAL PURPOSES.	
TWENTY-FOUR-INCH HOUSEHOLD TOOL CHEST.	
- Twenty-four-inch Household Tool Chest, with two Trays, contain	ing
the following Tools; namely:	
l Axe 2 Gages; namely, 1 Rule	
1 Bed-wrench with 3 1 Cutting gage 6 Saws; namely,	
shifting sockets 1 Marking gage 1 Hand-saw	
i Bill hook 2 Hammers i Dovetain saw	
l Brace and 24 bits 1 Mallet 2 Keyhole saws	,
4 Brad-awls 1 Oilstone cased and 1 pad 4 Brad-punches 1 Oilstone slip 1 Pruning saw	
- Diagraphicaes 2 October 197	io.
1 Chalk-line and reel 1 Oil-can I Frame saw 10. 7 Chisels; namely, 1 Pair of compasses metal	
4 Firmer chisels 1 Pair of pincers 1 Saw set	
2 Morting chicals 1 Pair of pliers 1 Scraper	
Chiselformetal 1 Pair plier punches, 2 Screw-drivers	
1 Crow-iron and 6 shifting 1 Striking kine	
4 Files and rasps cutters 1 Spokeshave	
12 Gimlets 3 Planes; namely, 1 Vice	
l Glue-pot, glue, and l Jack plane l Tape measure brush l Smoothing plane Screws, nails, brad	la l
brush 1 Smoothing plane Screws, name, pract	0,
2 Gouges 1 Trying plane &C. &C. The Chest of Deal, and painted, the Tools handled in Beech-wood	- 11 11 0
the Chest of Deal, and painted, the Tools handled in December	

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No.	Twenty-sever	N-INCH HOUSEHOLD TO	OI. CHEST	L s.
967 —				
907 —	ing the following To		and army by comman	
	1 Axe	2 Gages; namely,	1 Trying plane	
	1 Bed-wrench, with	1 Cutting gage	1 Rule	
		1 Marking gage	6 Saws; namely,	
	3 shifting sockets	2 Hammers	1 Hand saw	
	1 Bill hook	1 Mallet	l Dovetail saw	
	1 Brace and 24 bits			
	6 Brad-awls	1 Oilstone cased	2 Keyhole saws,	
	4 Brad-punches	1 Oilstone slip	and l pad	
	1 Chalk-line and reel	1 Uil-can	1 Pruning saw	
	7 Chisels; namely,	1 Pair of compasses	1 Saw for metal	
	4 Firmer chisels	1 Pair of pincers	1 Saw set	
	2 Mortise chisels	1 Pair of pliers	1 Scraper	
	1 Chiselfor metal	1 Pair of plier	2 Screw-drivers	
	1 Crow-iron	punches, and 6	1 Striking knife	
	4 Files and rasps	shifting cutters	1 Spokeshave	
	12 Gimlets	3 Planes; namely,	1 Vice	
	1 Glue-pot and brush	1 Jack plane	1 Tape measure, 30 ft.	
	3 Gouges	1 Smoothing plane	Screws, nails, brads	
	The Chest of Deal, and	painted, the Tools han	dled in Beech-wood -	12 12
		INCH HOUSEHOLD TOOL		
1968 —	<ul> <li>Thirty-inch Household following Tools; nar</li> </ul>	d Tool Chest, with two	Trays, containing the	
			1 Trying plane	į
	2 Axes	2 Gages; namely,	1 Rule	i
	1 Bed-wrench, and	1 Cutting gage		
	3 shifting sockets	1 Marking gage	6 Saws; namely,	}
	1 Bill hook	3 Hammers	1 Hand saw	
	1 Brace and 30 bits		1 Dovetail saw	1
		1 Oilstone cased	2 Keyhole saws,	}
	4 Brad-punches	1 Oilstone slip	and I pad	
	1 Chalk-line and reel	1 Oil-can	1 Pruning saw	
	10 Chisels; namely,	1 Pair of compasses	1 Saw for metal	
		1 Pair of pincers	1 Saw set	
	3 Mortise chisels	1 Pair of pliers	1 Scraper	
	1 Chisel for metal	1 Pair of plier	3 Screw-drivers	
	1 Crow-iron	punches, and 6	1 Striking knife	
	4 Files and rasps	shifting cutters	1 Spokeshave	
	12 Gimlets	3 Planes; namely,	1 Vice	1
	1 Glue-pot and brush		1 Tape measure, 50 ft.	1
	4 (1)	7 0 11 1	Canaria nails hrads	
	The Chest of Deal, and	l painted, the Tools har	dled in Beech-wood	13 13
		E-INCH HOUSEHOLD To		
309 -	— Thirty-three-inch Hou the following Tools ;	namely :		
	1 Set of augers & pad	1 Crow-iron	1 Pair of compasses	
	1 Axe	6 Files and rasps	1 Pair of pincers	
	1 Bed-wrench, and		1 Pair of pliers	
	3 shifting sockets		1 Pair of plier	1
		1 Glue-pot & brush	punches, and 6	1
	1 Bill hook	5 Gouges	philips outters	1
	1 Brace and 36 bits	2 Gages; namely,	shifting cutters	
	6 Brad-awls	1 Cutting gage	4 Planes; namely,	
	4 Brad-punches	1 Marking gage	1 Jack plane	
	1 Chalk-line and reel	3 Hammers	1 Smoothing plane	
	14 Chisels; namely,	1 Mallet	1 Trying plane	
	9 Firmer chisels	1 Oilstone cased	1 Side fillister	
	A =			
	4 Mortise chisels	1 Oilstone slip	1 Rule 6 Saws; namely,	

Y.THREE INCH HOU	SEHOLD TOOL CHE	ST—continued.	€ 8. d
1 Hand saw		1 Spokeshave	
I Dolomir Do		1 Tape measure, 66 ft.	
		Screws, nails, brads,	
and the same of th		brass hooks, &c.	
1 Pruning saw	Striking knife	lled in Reach-wood	14 14
The Chest of Deal, and	painted, the 100is nand	Hed III Deectl-wood	12 12
	NCH HOUSEHOLD TOOL		
Thirty-six-inch Househ the following Tools;	old Tool Chest, with t	wo Trays, containing	
1 Adze	2 Gages; namely,	1 Rule	
l Set of augers and	1 Cutting gage	6 Saws; namely,	
pad	l Marking gage	1 Hand saw	
1 Axe	3 Hammers	1 Compass saw	
l Beak-iron	1 Oilstone cased	2 Keyhole saws,	
1 Brace and 36 bits	1 Oilstone slip	and 1 pad	
6 Brad-awls	1 Oil-can and pin	1 Dovetail saw	
	1 Pair of compasses	1 Frame saw for	
4 Brad-punches	1 Pair of pincers	metal	
1 Chalk-line and reel	1 Pair of pliers	1 Saw set	
16 Chisels; namely,	1 Pair of plier	1 Scraper	
9 Firmer chisels	punches, and 6	3 Screw-drivers	
4 Mortise chisels	shifting cutters	1 Striking knife	
1 Chiselfor metal		1 Spokeshave	
2 Socket chisels	5 Planes; namely, 1 Jack plane	l Vice	
1 Crow-iron		l Tape measure, 66	
6 Files and rasps	1 Smoothing plane	feet long	
12 Gimlets	1 Trying plane 1 Side fillister	Screws, nails, brads,	
1 Glue-pot & brush			
	1 Planch & Simons	hrass hooks, &c.	Į.
(D.) Tool Chests F	1 Plough & 8 irons 1 painted, the Tools har 2 row 30 to 36 Inches		15 15
The Chest of Deal, and (D.) Tool Chests F	l painted, the Tools han	ndled in Beech-wood -	15 15
The Chest of Deal, and (D.) Tool Chests F  OF	rom 30 to 36 Inches Joiners and Others.	Added in Beech-wood - Long, FOR THE USE CHESTS.	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOL Chest, with three T	LONG, FOR THE USE CHESTS.	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three To of following Tools; nam	Long, FOR THE USE  CHESTS.  crays, and a Till for the	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T  Saws, containing the 1 Axe	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL TO following Tools; nam 1 Mortise gage	LONG, FOR THE USE  CHESTS.  Trays, and a Till for the cly:  1 Fillister	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T  Saws, containing the 1 Are 1 Bevil	ron 30 to 36 Inches Joiners and Others.  TY-INCH JOINERS' Tool ool Chest, with three Te of following Tools; nam 1 Mortise gage 1 Hand-vice	CHESTS.  Crays, and a Till for the ely:  1 Fillister 3 Hollows	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirm  Thirty-inch Joiners' T  Saws, containing the  1 Axe 1 Bevil 1 Brace and 24 bits	round Joiners' Tools have Joiners and Others.  TY-INCH JOINERS' Tool Cool Chest, with three To following Tools; nam  1 Mortise gage 1 Hand-vice 2 Hammers	CHESTS. Tays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T  Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL tool Chest, with three Toolowing Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet	CHESTS. Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T  Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three To following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point	LONG, FOR THE USE  CHESTS.  Trays, and a Till for the cly:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead planes	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRM  Thirty-inch Joiners' T  Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch	ron 30 to 36 Inches Joiners and Others.  TY-INCH JOINERS' Tool ool Chest, with three Te following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square	CHESTS.  rays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRM  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL TOOI Chest, with three Toolowing Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone in case	CHESTS. Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely,	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL Cool Chest, with three Tool Chest, with three Tool State of the state of	CHESTS. Crays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirkogee plane 1 Rule 8 Saws; namely,	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three T of following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone slip 1 Pair of compasses	CHESTS.  Crays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels	round 30 to 36 Inches Joiners and Others.  Trinch Joiners' Tool col Chest, with three Te following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers	CHESTS.  Tays, and a Till for the ely:—  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRM  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL tool Chest, with three Tool following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair cutting pliers	CHESTS. Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL Cool Chest, with three Tool Chest, with the Tool Chest, with three Tool Chest, with the Tool Chest, with the Tool Chest,	CHESTS.  Crays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three T of following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears	CHESTS.  Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRM  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL TOOL Chest, with three Tool Chest, with the Tool Chest, with	CHESTS. Trays, and a Till for the ely:—  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRT  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL TOOL Chest, with three Tool Cool Chest, with three Tool Chest, with the Tool Chest, with the Tool Ch	CHESTS. Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRM  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife 4 Files	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL COOL Chest, with three Tool Chest, with the Tool Chest, with the Tool Chest, with the Tool Chest,	CHESTS.  Crays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirkogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife 4 Files 6 Gimlets	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three T of following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 4 Pencils 21 Planes; namely, 1 Jack plane 1 Smoothing plane	CHESTS.  Tays, and a Till for the ely:—  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set 1 Saw set	
The Chest of Deal, and  (D.) Tool. Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife 4 Files 6 Gimlets 1 Glue-pot and brush	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL tool Chest, with three Tool following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair of pincers 1 Pair of shears 1 Pairs; namely, 1 Jack plane 1 Smoothing plane	CHESTS. Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set 1 Scraper 4 Screw-drivers	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRT  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 2 Socket chisels 1 Chisel for metal 1 Crow-iron 1 Drawing knife 4 Files 6 Gimlets 1 Glue-pot and brush 6 Gouges	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL COOL Chest, with three Tool	CHESTS.  Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set 1 Scraper 4 Screw-drivers 1 Spokeshave	
The Chest of Deal, and  (D.) Tool Chests F  OF  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Crow-iron 1 Drawing knife 4 Files 6 Gimlets 1 Glue-pot and brush 6 Gouges 2 Gages; namely,	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three T of following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears 4 Pencils 21 Planes; namely, 1 Jack plane 1 Smoothing plane 1 Trothing plane 1 Toothing plane 1 Toothing plane 1 Toothing plane	CHESTS.  CHESTS.  CHESTS.  CARRYS, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set 1 Scraper 4 Screw-drivers 1 Spokeshave 2 Squares	
The Chest of Deal, and  (D.) Tool Chests F  OF  THIRT  Thirty-inch Joiners' T Saws, containing the 1 Axe 1 Bevil 1 Brace and 24 bits 6 Brad-awls 4 Brad-punches 1 Center punch 1 Chalk-line & reel 14 Chisels; namely, 6 Firmer chisels 4 Mortise chisels 2 Socket chisels 2 Socket chisels 1 Chisel for metal 1 Crow-iron 1 Drawing knife 4 Files 6 Gimlets 1 Glue-pot and brush 6 Gouges	ROM 30 TO 36 INCHES JOINERS AND OTHERS.  TY-INCH JOINERS' TOOL OOI Chest, with three T of following Tools; nam 1 Mortise gage 1 Hand-vice 2 Hammers 1 Mallet 1 Marking point 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears 4 Pencils 21 Planes; namely, 1 Jack plane 1 Smoothing plane 1 Trothing plane 1 Toothing plane 1 Toothing plane 1 Toothing plane	CHESTS.  Trays, and a Till for the ely:  1 Fillister 3 Hollows 3 Rounds 3 Bead planes 1 Cock bead plane 2 Quirk ogee plane 1 Rule 8 Saws; namely, 1 Hand saw 1 Compass saw 1 Dovetail saw 3 Keyhole saws and pad 1 Sash saw 1 Saw for metal 1 Saw set 1 Scraper 4 Screw-drivers 1 Spokeshave	

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No.			£
		EE-INCH JOINERS' TOOL	
1973	- Thirty-three inch Jeine:	rs' Tool Chest, with thr	ee Trays, and a Till
	for the Saws, contain	ing the following Tools	namely:-
	1 Adze	1 Mortise gage	1 Fillister
	3 Augers	3 Hammers	4 Hollows
		l Hand-vice	4 Rounds
	1 Axe		
	1 Beak-iron	1 Mallet	1 Astragal plane
	1 Bevil	1 Marking point	4 Bead planes
	1 Brace, and 30 bits	1 Mitre square	1 Cock bead plane
	9 Brad-awls	1 Oilstone in case	1 Ogee plane
	4 Brad-punches	1 Oilstone slip	1 Quirk ogee plane
	1 Center punch	1 Pair of compasses	1 Rule with slide
	1 Chalk-line and reel	1 Pair of pincers	9 Saws; namely,
	15 Chisels; namely,	1 Pair cutting pliers	1 Hand saw
	6 Firmer chisels	1 Pair of flat pliers	1 Panel saw
	4 Mortise chisels	1 Pair of shears	1 Compass saw
	3 Socket chisels	1 Pair of spring	1 Dovetail saw
			3 Keyhole saws
	1 Bolt chisel for	dividers	
	locks	1 Pair hand-screws	and pad
	1 Chisel for metal	6 Pencils	1 Sash saw
	1 Crow-iron	27 Planes; namely,	1 Saw for metal
	1 Drawing knife	1 Jack plane	1 Saw set
	6 Files	1 Smoothing plane	1 Scraper
	6 Gimlets	1 Trying plane	6 Screw-drivers
	1 Glue-pot, & brush	1 Toothing plane	1 Spirit level
	6 Gouges	1 Plough & 8 irons	1 Spokeshave
	2 Gages; namely,	1 Grooving plane	2 Squares
	1 Marking gage	4 Rebate planes	Screws, nails, &c.
	I Marking gage	4 Itenate planes	20
	mi - Class to Day I and	maintad	
1974 —	The Chest of Deal, and The Chest of Deal, line	d with Mahogany, or W	Vainscot 22 CHESTS.
1974 — 1975 —	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing	d with Mahogany, or W K-INCH JOINERS' TOOL 'Tool Chest, with four the following Tools; n	Vainscot 22 CHESTS. Trays, and a Till for amely:—
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI Thirty-six-inch Joiners the Saws, containing 1 Adze	d with Mahogany, or W x-inch Joiners' Tool 'Tool Chest, with four the following Tools; n l Mortise gage	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIZ Thirty-Siz-inch Joiners the Saws, containing 1 Adze 4 Augers	d with Mahogany, or W x-INCH JOINERS' TOOL i' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIZ Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe	d with Mahogany, or W x-INCH JOINERS' TOOL 'Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX THIRTY-SIX THE Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron	d with Mahogany, or W x-INCH JOINERS' TOOL 3' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point	Tainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI: Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirkogee planes
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI: Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak irou 1 Bevil 1 Brace, with 33 bits, and 2 collars	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely,
	The Chest of Deal, and The Chest of Deal, line THIRTY-SI. Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block J Mitre square 1 Oilstone slip 1 Oil-can	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide
	The Chest of Deal, and The Chest of Deal, and The Chest of Deal, and Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX THIRTY-SIX THIRTY-SIX THORY-SIX 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely,	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair cutting pliers	Vainscot 22  CHESTS.  Trays, and a Till for amely:—  6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels	d with Mahogany, or W x-INCH JOINERS' TOOL y' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block J Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair cutting pliers 1 Pair of flat pliers	Vainscot 22  CHESTS.  Trays, and a Till for amely:—  6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw
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	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears 1 Pair spring dividers	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Table saw 3 Keyhole saws and pad 1 Sash saw
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal	d with Mahogany, or W x-INCH JOINERS' TOOL 'Y Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair pair hand screws 1 Pair spring dividers 6 Pencils	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Doretail saw
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears 1 Pair spring dividers	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Serew head saw
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal	d with Mahogany, or W x-INCH JOINERS' TOOL 'Y Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair pair hand screws 1 Pair spring dividers 6 Pencils	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Screw head saw 1 Turning saw
	The Chest of Deal, and The Chest of Deal, line THIRTY-SIX-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Chiselfor metal 1 Crow-iron 1 Drawing knife	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears 1 Pair of shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane	Vainscot
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Chisel for metal 1 Crow-iron 1 Drawing knife 6 Files	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears 1 Pairspring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 2 Keyhole saws 2 and pad 1 Sash saw 1 Dovetail saw 1 Turning saw 1 Saw set 1 Seraper
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Screw head saw 1 Turning saw 1 Saw set 1 Scraper 6 Screw-drivers
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Chisel for metal 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets 1 Glue-pot & brush	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane 1 Plough, & 8 irons	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Screw head saw 1 Turning saw 1 Saw set 1 Scraper 6 Screw-drivers
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Chiselfor metal 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets 1 Glue-pot & brush 8 Gouges	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of pincers 1 Pair of flat pliers 1 Pair of shears 1 Pair of shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane 1 Plough,&8 irons 3 Grooving planes	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Screw head saw 1 Turning saw 1 Saw set 1 Scraper 6 Screw-drivers 1 Spirit level
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Bolt chisel 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets 1 Glue-pot & brush 8 Gouges 3 Gages; namely,	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Haud-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair fof flat pliers 1 Pair fof shears 1 Pair fof shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane 1 Plough,& 8 irons 3 Grooving planes with stops	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead plane 3 Ogee planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Table saw 1 Compass saw 3 Keyhole saws and pad 1 Sash saw 1 Dovetail saw 1 Screw head saw 1 Turning saw 1 Saw set 1 Scraper 6 Screw-drivers 1 Spirit level 1 Spokesbave 3 Squares
	The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 2 Socket chisels 1 Bolt chisel 1 Chisel for metal 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets 1 Glue-pot & brush 8 Gouges 3 Gages; namely, 1 Cutting gage	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n I Mortise gage 3 Hammers 1 Hand-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of flat pliers 1 Pair of shears 1 Pair pair dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane 1 Plough,& 8 irons 3 Grooving planes with stops 4 Rebate planes	Vainscot 22 CHESTS. Trays, and a Till for amely:— 6 Hollows 6 Rounds 2 Astragal planes 6 Bead planes 1 Cock bead planes 3 Quirk ogee planes 1 Compass plane 1 Rule with slide 11 Saws; namely, 1 Hand saw 1 Panel saw 1 Panel saw 1 Table saw 2 Keyhole saws 2 and pad 2 Sash saw 3 Lovetail saw 1 Sarew head saw 1 Turning saw 1 Sarewed saw 1 Turning saw 1 Sarewed saw 1 Serewed saw 3 Serewed saw 3 Serewed saw 3 Serewed saw 3 Serewed saw
	The Chest of Deal, and The Chest of Deal, and The Chest of Deal, line Thirty-six-inch Joiners the Saws, containing 1 Adze 4 Augers 1 Axe 1 Beak iron 1 Bevil 1 Brace, with 33 bits, and 2 collars 9 Brad-awls 4 Brad-punches 1 Center punch 6 Carving tools 1 Chalk-line and reel 16 Chisels; namely, 8 Firmer chisels 4 Mortise chisels 2 Socket chisels 1 Chiselfor metal 1 Crow-iron 1 Drawing knife 6 Files 8 Gimlets 1 Glue-pot & brush 8 Gouges 3 Gages; namely, 1 Cutting gage 1 Marking gage	d with Mahogany, or W x-INCH JOINERS' TOOL 's' Tool Chest, with four the following Tools; n 1 Mortise gage 3 Hammers 1 Haud-vice 2 Mallets 1 Marking point 1 Mitre block 1 Mitre square 1 Oilstone in case 1 Oilstone slip 1 Oil-can 1 Pair of compasses 1 Pair of pincers 1 Pair of flat pliers 1 Pair fof flat pliers 1 Pair fof shears 1 Pair fof shears 1 Pair spring dividers 6 Pencils 41 Planes; namely, 1 Jack plane 2 Smoothing planes 1 Trying plane 1 Plough,& 8 irons 3 Grooving planes with stops	Vainscot

TOOL CABINET.

8. d.

77 TOOL CABINET, 22 inches high, 24 wide, 15 deep, with rising lid, and five drawers, partitioned to contain various assortments of the most useful tools, for the general purposes of mechanical amateurs. The Cabinet of Birch-wood, the Tools handled in Beech-wood.

£12 0 0, £16 0 0, £20 0 0, £24 0 0 each. The Cabinet of Mahogany, the Tools handled in Hard-wood. £15 0 0, £19 0 0, £24 0 0, £28 0 0 each.
Lists of the contents of the above Cabinets furnished on application.

### TOOL CABINET IN TWO PARTS.

33 TOOL CABINET in two parts, measuring together 5 feet 6 inches high, 22 inches wide, and 11 deep; with two doors, two drawers, eight shelves, sundry racks and partitions, for containing an assortment of 178 tools, for cabinet work and general purposes, which are inlaid in the doors, drawers, and shelves.

The Cabinet of Birch-wood, the Tools handled in Beech-wood -30 The Cabinet of Mahogany, the Tools handled in Hard-wood

The list of the contents will be furnished on application.

700 TOOL RACKS in Birch or Mahogany - - - - The foot TRAMMELS for drawing ellipses. (See No. 1277 to 1280.) TROWELS, Brick, Guaging, Pointing, and Plastering Trowels. TURNED WORKS. A variety of highly-finished specimens of turning,

in wood and ivory, illustrative of the works that may be executed, by means of the various lathes and apparatus for plain and ornamental turning, manufactured by H. & Co.

Turned Works in wood, ivory, &c., for useful and ornamental pur-

poses, executed to order.

Turned Works in metal, &c., for general, mechanical, and scientific purposes, executed to order.

TURNING LATHES AND APPARATUS. These are described at a former part of this Catalogue, under the following heads :-

COMPLETE LATHES.

1. Lathes descriptions one to six, for the general purposes of

hand-turning, page 29.

2. Lathes descriptions seven to twelve, with traversing mandrels, or traversing tools for screw cutting, and general purposes,

3. Lathes descriptions thirteen to eighteen, with apparatus for plain and ornamental turning in wood, ivory, &c., page 32.

DETACHED PARTS OF LATHES.

4. Mandrels, lathe heads, or headstocks, page 35.

5. Chucks for fixing works in the lathe, page 36.

6. Chucks or apparatus for ornamenting works in the lathe,

7. Slide rests, principally for ornamental turning in wood and ivory; with tools and revolving cutters for the same, page 40.

8. Slide rests, principally for metal turning; with tools and revolving cutters for the same, page 42.

9. Miscellaneous lathe apparatus, page 43.

The descriptions are interspersed with various sub headings and explanatory notes, intended to assist the amateur in the selection of turning machinery. The reader is particularly referred to the notes on pages 28-9, and 34-5.

### HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.

No. 1986 TURNING TOOLS of numerous kinds to be used by hand, supplied either
in sets or singly; handles charged extra.
(A.) Turning Tools for Soft Wood.
1987 — Gouges The set of 6 tools 0 7 1988 — Chisels 6 — 0 6
1985 — Chiseis
1989 — Hook tools, for hohowing works
1990 — Broads, for smoothing hat surfaces 0 12
1988
1992 — Side tools, for hollowing cylindrical works  1993 — Parting tools • • • • • • • • • • • • • • • • • • •
1993 — Farting tools 1994 — V Tools, for cutting screws The pair 0 6
(B.) Turning Tools for Hardwood and Ivory.
1000 Besting tools below 1 inch
1996 — Beading tools from 1 to 1 inch 12 — 0 18
1998 — Beading tools from 1 to 1 inch 6 — 0 9
1999 — Bevil tools, right and left 6 — 0 6
1996
2001 — Gouges 6 — 0 7
2002 — Inside tools 3 — 0 4
2002
2004 - Moulding tools 24 - 1 10
2005 — Parting tools 6 — 0 0
2006 — Point tools 6 — 0 3
2007 — Quarter round tools, right and left 12 — 12
2008 — Quarter hollow tools, right and left 12 — 0 10
2009 — Right side tools
2010 — Round tools
2011 —— Screw tools. The set of 12 pairs of H. & Co.'s pitches, Nos. 1 to 12
2012 — Screw tools. The set of 12 pairs of H. & Co.'s pitches, Nos. 1 to 12
of Shallow Threads
2012 — Serew tools. The set of 12 pairs of H. & Co.'s pitches, Nos. 1 10 12  2013 — Screw tools, Nos. 1 2 3 4 5 6  3s. 9d. 3s. 6d. 3s. 3d. 3s. 2s. 9d. 2s. 6d. The pair  2014 — Screw tools, Nos. 7 8 9 10 11 12  2s. 6d. 2s. 4d. 2s. 2d. 2s. 2d. 2s. 1s. 10d. The pair
38. 9a. 38. 0a. 38. 3a. 3s. 2s. 9a. 2s. 0a. 10
2s. 6d. 2s. 4d. 2s. 4d. 2s. 2d. 2s. 1s. 10d. The pair
The same screw tools are also used for brass, iron, and steel.
Some of the tools, 1995 to 2010, are made thinner than usual, to be used
for inoral
COLS - Tools for turning the Chinese balls which consist of thin sacres
contained one within the other. The halls are carved by and
with small and appropriate tools, subsequently to their having
been separated from within one another in the lathe.
(C.) Turning Tools for Brass, generally with rectangular edges.
m of B tools U
2016 — Flat tools 2017 — Point tools 2017 — Point tools 2018 — 6 — 0
2017 — Point tools 6 — 0
2019 — Square tools 6 — 0
2020 — Milling tools
2018 — Round tools 2019 — Square tools 2020 — Milling tools 2021 — Tools for finishing metal balls. Each tool consists of a steel ring, smaller in diameter than the ball to be turned.
smaller in diameter than the ball to be turned.
(D.) Turning Tools for Iron and Steel, strong, with keen edges.
2022 — Flat tools The set of 6 tools 0
2022 — Flat tools
9004 Hook on hool tools
2024 - Hook of fleet wors
2025 — Round tools 6 — 0
2022 — Tat tools 2 — — — — — — — — — — — — — — — — — —

HOLTZAPFFEL AND	CO.'S GENERAL CA	TALOGUE, 1844.		
		£	a. d.	
TURNING TOOLS to suit	the socket handles, N	o. 1878. Most of the		
C. Also coles of nor	tobility but they are	more expensive, and		
somewhat less conve	nient for use, than turn	ing tools with ordinary		
handles.		C		
TURNING TO	OL CUPBOARDS, WITH 3	56 TOOLS.		
M28 TURNING TOOL CUPBO door, and containing	ARD, to hang against	the wall, with single		
door, and containing	36 Tools, half in long	nandles, and han in		
short nandles ; name	2 Right-side tools	2 Point tools for ivory		
2 Chisels 2 Drills	2 Round tools	2 Round tools		
2 Gouges	4 Screw tools	2 Flat tools for brass		
2 Gravers	2 Flat tools for ivory	2 Square tools		
2 Parting tools	2 Right-side tools —	2 Round tools		
	2 Left-side tools —	lled in Beech-wood -	4 10	0
The Cupboard of Mah	ogany, the Tools handl	ed in Hard-wood	5 10	0
TURNING T	OOL CUPBOARDS, WITH	54 TOOLS.		
30 - TURNING TOOL CUPBO	ARD, to hang against the	e wall, with single door,		
and containing 54 T	'oolg all in short hands	3 Point tools for ivory		
3 Chisels 3 Drills	3 Round tools	3 Round tools		
3 Gouges	6 Serew tools	3 Flat tools for brass		
3 Gravers	3 Flat tools for ivory	3 Square tools		
3 Parting tools	3 Right-side tools —	3 Round tools		
3 Point tools	3 Left-side tools —	Hed in Beech-wood -	5 5	0
The Cupboard of Mal	ch-wood, the Tools hand	ed in Hard-wood	6 6	0
TURNING TOOL CUPBO	OOL CUPBOARDS, WITH	wall, with double doors.		
and containing 50	Pools, half in long han	dles, and half in short		
handles; namely,	200109 111111			
2 Chisels	8 Screw tools	2 Point tools for ivory		
2 Drills	2 Flat tools for brass	2 Right-side tools -		
2 Gouges	2 Point tools	2 Round tools 2 Narrow round tools		
2 Gravers	O Clausena toola	tor IVOTV		
2 Parting tools 2 Point tools	2 Revil tools for iver	v 2 Flat tools for steel		
2 Right-side tools	2 Flat tools	Z Triangular vous		
2 Round tools	2 Left-side tools -	dlod in Reech-wood	6 10	0
The Cupboard of Ma	ch-wood, the Tools hand	lled in Hard-wood	8 0	0
The Cupboard of Ma	mogany, the 10010 man	75 Tools		
1034 — TURNING TOOL CUPBE	FOOL CUPBOARDS, WITH	e wall, with double doors,		
and containing 75	Tools, all in short hand	Hes; Harnery,		
3 Chisels	12 Screw mons	o I order to the land		
3 Drills	3 Flat tools for bra			
3 Gouges	3 Point tools			
3 Gravers	3 Round tools 3 Square			
3 Parting tools 3 Point tools	3 Bevil tools for ivo	ry for ivory		
3 Right-side tools	3 Flat tools	3 Flat tools for steel		
		_ 3 Triangular tools—	7 7	0
The Cumboard of Bi	rch-wood, the Tools ha	alled in Beech-wood	8 8	
The Cupboard of M	lahogany, the Tools han	ing tools, made with rec-		
tangular tangg of	uniform size so as to	fit into the socket han-		
dleg Neg 1878 r	M 1879.			
1037 TWEEZERS, various.	(See Cutlery, No. 1229.	.)	1	

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### HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 1844.

TO DESCRIPTION OF STATE OF TABOUTE, 1844.			
No. 2038 UPH_LSTERER'S TOOLS. See Hammers, Needles, Pincers, Scissors, &c.	£	8.	d.
2039 VICES of various kinds for grasping works.			
2040 — Bench, or tail vices, from 20 to 50 pounds' weight and nawards			
such as are used by artizans in general - The lb from Ed all	0	0	10
2041 — Bench vices of from I to IU pounds' weight, with levers and seraw			
clamps, by which they may be fixed to the table; these are used			и
by watchmakers and others Each from 9s. to 2042 —— Parallel vices, the jaws of which separate in a right line, and there-	1	5	1
fore remain always parallel : generally made with screw clamps			П
having a swivel joint, by which the vice may be inclined at all			
horizontal angles Each from 11. 10s. to  Parallel vices, with ball and socket joints, to enable them to be in-	6	0	1
clined vertically as well as horizontally Each from 31. to	2	۸	
2044 —— Table vices made like hand vices, and with screw clamps for the		0	n
table Each from 7s. 6d. to  2045 — Table vices for netting Each from 2s. to	0	9	ě
2045 — Table vices for netting Each from 2s. to	0	3	13
2046 — Table vices with various joints for making artificial flies for fishing, and which latter may be held at almost every position to the			
operator Fach from 10s to	1	10	
operator - Each from 10s. to Hand vices, bright or black, with fly nuts - Each from 2s. to	0	7	2
2048 —— Hand vices, with perforated wooden handles, to adapt them to hold			0
long wires Each from 4s 6d to	0	7	ti
2049 — Pin vices, some of them perforated for the convenience of holding	0	4	.5
very small wires Each from 3s. to	U	4	п
The best of the above vices have spherical or swivelled washers, to im-			
prove the contact of the nut; and the last three kinds have either wide			
or cross chaps, like tail vices, or else very narrow chaps, and such are known as dog-nose vices.			
2050 VICE BENCHES of beech or mahogany, with drawers to contain the various tools used for working in metal.			ı
2051 VICE CLAMPS to prevent the works from being injured by the teeth of			ı
the tail vices, or of the bench or parallel vices.  2052 — Vice clamps of iron, copper, brass, or lead, bent to the form of the			и
jaws of vices The pair from 1s. to	0	3	0
2053 — Vice clamps of metal with joints or springs: upright, sloping, rivet-			
ing, and other vice clamps The pair from 10s. to	2	0	
2054 — Vice clamps of wood, upright, sloping, or jointed The pair from 6s. to	0	IU	17
2055 VICE STANDS of cast-iron, made in the form of a tripod, which gives a secure footing to the vice, with ready means of shifting it about			
to suit the light, or the convenience of work, and with lifting blocks,			
to alter the height of the vice above the ground Each from 4l. to	5	0	33
2056 WATCHMAKER'S TOOLS. Wheel cutting engines. Upright tools,			
and others of the specific machines and tools, supplied to			
2057 — Watchmaker's tools of the smaller and ordinary kinds; see the re-			
spective heads in this Catalogue			
2058 WHEELS FOR LATHES and machinery.			
2059 — Foor Wheels 24 inches to 30 inches diameter, turned with single,			
double, or triple series of bevilled grooves, and mounted on wrought iron cranks, from 1½ to 4 feet long Each from 3t. 10s. to	6	10	0
The Crunk hooks are included in the charge, but the treadles and const			
screws are charged extra. Oranks of greater length are made with			
two throws, or bends.			
2060 — HAND FLY WHEEL, with grooves, from 8 to 30 inches diameter.			
with iron spindle working in cast-iron bearings, and mounted on a frame of beech-wood; the lower part of the pedestal may be screwed			
to the floor, the upper is mounted on a swing frame, and has			
two tightening screws and apparatus for adjusting the tension of	15	0	0
the band. Handles to serve for one or two men	E C		

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	HOLIZAPPPELL AND	CO. B CHERNBER CALL	1120000, 2011		
				_	
No.	EELS FOR LATHES-cont	mued.		Ε.	8. 0
w.1	TI L'IV WEET, WIT	B RVe grooves, C. IU. A.	4, 32, and 40 inches		
				10	0
	tightening screws, and HAND FLY WHEEL, SA	l two handles		90	0
67	HAND FLY WHEEL, SA	me as No. 2061, but wit	in a swing frame of	15	0
				25	U
. 63	II. NE FIN WHEEL SAL	ne as No. 2001, but will	a massive cast-iron	25	0
	Thebittoner ton commit	mth the tichtening appai	Carries ~	20	0
	The last three are sufficie	ntly heavy not to require	manding & feet and		
	and other fly wheels of	f greater diameter, not e	acceeding o jeet, and		
	variously mounted, ar	e also made to order.	with any number of		
. 64	WHEELS AND PINIONS	of various kinds, and	With any number of		
	teeth, cut to order. WILLIS'S (Rev. Professor)	Contradiction for trans	cribing the Sections		
. 500	WILLIS'S (Rev. Professor)	ldings. (See Nos. 1286	and 1287.)		
	- ODONTAGRAPH for desc	wiking the curves prope	er for the Teeth of		
. 166	UDONTAGRAPH for machine	ry. On card-board, w	ith Tables, and var-		
	nished. (See Appen	div C page 70)	Each	0	5
2.0	ORTHOGRAPH, & re-con	struction of the Panto	graph, giving it the		
- 01	annotage famility of m	ection, and adapting it is	J IFFEGURAL DOMAS, as	1	
	well as to Plain Sur	faces, such as all object	s of natural history,		
	machaniam and way	ka of art. Arc.		1	
168	Comparagrant LATRE 1	or the mounting of skele	tons. The bones are		
.700	funt fund in avadles	in the exact relative ix	BILIOH THEY OCCUPY IN		
	matuma a thora and after	rwards sawn and drilled	1 for the formation of	1	
	the artificial joint,	with a certainty of the	given position being		
	acomposite maintained	,		1	
. 469	Curren Raps with shift	ting blades for turning in	ietal. (See No. 1022.)		
.170	The Harman with 6	wive movement for a	singe Lears for The way		
	turning, to enable the	e tool to be grasped nr	mly at any norizontal	1	
- 71	- Vertical or Recipro WHEEL CUTTING APPA	CATING SAW MACHINE.	(See No. 1625.)		
- 72	- WHEEL CUTTING APPA	RATUS, and Shaping Eng	d also annealed iron		
- 113	WIRE of brass, iron, and s	teel, of various sizes, an	for soldering		
	Pinion Wire, or stee	in tying works together	ves used for making	7	
*	- Pinion Wire, or stee	and watches	archy about son some	1	
10.71	the pinions of clocks WIRE DRAWING PLAT	FS /See Draw Plates	No. 1241.)		
3084	WOODS. Foreign Hardwo	and of the following king	ds in the log; namely	9	
-	African Black-wood*†	Greenheart	Peruvian-wood		
	Amboyna	Grenadillo1	Princes-wood		
	Beef-wood	Iron-wood	Purple-wood		
	Black Ebony‡	King-wood*	Red Sanders-wood		
	Box-wood†‡	Lignum Vitæ‡	Rosetta-wood		
	Brazil-wood	Locust-woodi	Rose-wood‡		
	Brazilletto	Mahogany‡	Sandal-wood		
	Bullet-wood*†	Maple-wood	Satin-wood†		
	Cam-wood+	Mustaiba	Snake-wood*		
	Cocoa-wood+1	Olive-tree and root	Tulip-wood*		
	Coromandel-wood	Palmyra-wood	Yacca-wood		
4.	Green Ebony‡	Partridge-wood	Zebra-wood	01	
-1,	- Foreign Hardwoods	f most of the above Ki	for the lathe		
PO:	inches long, prepar	ed with the paring knife	TOT SHO WITTE!		
501	8 — Foreign Hardwoods p	repared in the Lathe.		_	
-	* 17				
	* Frequently scarce	d, even tinted, and the m	nore proper for excentr	ic	
	turning; out others	and extensively used.	All the woods may	be	
	+ Generally abundant	cerett circumstoned amount			

Concrally abundant and extensively used. At the woods may bused for plain turning.

### APPENDIX (A.)-TO HOLTZAPFFEL AND CO.'S GENERAL CATALOGUE, 18(4)

### HOLTZAPFFEL & CO.'S LIST OF TABLE CUTLERY.

### A COMPLETE LIST OF GENERAL CUTLERY,

INCLUDING PEN, POCKET, SPORTSMEN'S, AND OTHER KNIVES; RAZORS, SCISSORS, AND MISCELLANGUE
ARTICLES, WILL BE FOUND ON PAGES 13 TO 16 OF THE GENERAL CATALOGUE.

ARTICLES, WILL BE FOUND ON PAGES 13 TO 16 OF THE GE	NERAL CAT	ALOQUE.	
Sheffield-made Blades.	Table Knives and Forks The Dozen.	Dessert Knives and Forks The Dozen.	Carr ng Kuives and Forks The Pair.
No.	£. 8. d.	£. s. d.	£ 1.4
Common strong Knives and Forks, in Plain Handles of Bone 2— or Wood, either solid or in halves, and rivetted 3— 4— 5— 5— 5— 6— 6— 6— 6— 6— 6— 6— 6— 6— 6— 6— 6— 6—	0 5 0 0 6 0 0 8 0 0 10 0 0 12 0	<b>B</b> 8 0 0 10 0	0 3 0 N 3 6
Plain Shear-steel Knives and Forks, in Handles of good Bone or Stained Horn, either solid, or in halves and rivetted	0 14 0 0 16 0 0 18 0	12 0 0 14 0 0 16 0	0 4 6 0 5 6
Warranted Knives and Forks, in solid Handles of the best Natural Buck or Stag Horn, also in Octagon Handles of Ox 11-11-12-13-13-13-13-13-13-13-13-13-13-13-13-13-		0 18 0    0 0    0    1    0 0 18 0	0 8 6 0 6 0 0 6 0 0 7 0
Warranted Knives and Forks, in solid Handles of Ivory, either  14— 15— 16—  LONDON MADE BLADES,		1 0 0 1 1 6 0	0 7 0 0 7 0 0 8 0
In Ivory Octagon Handles	2 0 0 2 2 1	1 10 0 1 12 0 2 10 0	0 8 6 0 9 4 0 12 4
Ferrules In fine Transparent African Ivory Fluted Octagon Handles with Silver Ferrules  19 20 20 20 20 20 20 20 20 20 20 20 20 20	<b>∥</b> 10 <b>∥</b>	0 0	0 13 0
SETS OF TABLE CUTLERY IN CA	ASES.		_
The Cases are of Mahogany, or Oak, and bound with brass; they separate compartments for each piece.  The Cases are charged a little extra if lined with cloth or with cotto All the Knives supplied in these Cases have balanced handles; but I are not included in the annexed Prices.	are lined i		
	Cutlery No. 18.	Cutlery No. 19.	No. 30.
Sets of 2 dozen Table Knives, 2 dozen Dessert Knives, 2 Pairs of Table Carvers, and 1 Knife Steel	£. s. d. 9 10 0	£. s. d. 12 5 0	13 10 0
Sets of 4 dozen Table Knives, 3 dozen Dessert Knives, 2 Pairs of Table, and 2 Pairs of Poultry Carvers, and 1 Knife Steel Sets of 6 dozen Table Knives, 4 dozen Dessert Knives, 3 Pairs	15 15 0	21 0 0	23 10 0
of Table, and 3 Pairs of Poultry Carvers, 1 Knife Steel, and 1 Cheese Scoop Sets of 8 dozen Table Knives, 6 dozen Dessert Knives, 4 Pairs	22 0 0	29 0 0	33 0 0
of Table and 4 Pairs of Poultry Carvers, 2 Knife Steels, and 1 Cheese Scoop	30 0 0	40 0 0	Custa
DESSERT KNIVES AND FORKS OF STEEL, PLATED WITH SILVER	, AND CON	TAINED IN	CASES
	£. s. d.	£. s. d.	£. s. d
m. a		6 0 0	7 10 0
Sets of 1 dozen pairs, variously mounted in Ivory Handles	4 10 0		
Sets of 1 dozen pairs, variously mounted in Ivory Handles .  Sets of 1 dozen pairs, variously mounted in Pearl Handles  Knives with balanced handles 3s. the dozen extra.	6 0 0	8 0 0	10 0 0

Knives without Forks, one third less the dozen than Knives and Forks.

New blades to old handles 12s. to 18s. the dozen.

A general assortment of fowl, ham, and scimitar Carving Knives, Forks, and Steels, in ivery, buck, and stars-horn handles which and stag-horn handles, plain, or with silver mountings.

Also sets of Knives for the kitchen, dc., namely, asparagus, butchers', bread, butter, cheese, cook at the proof knives and steels and state of knives and steels and bandles root knives, and steels; and cutlet, mincing, and steak choppers, with iron, horn, or wood handle-rests, Initials, or Names engravatory and the horn, and steak choppers, with iron, horn, or wood handle-Crests, Initials, or Names engraved on the handles to order.

Cutlery of every description repaired, ground, or set, and made to any given pattern.

VAREHOUSE, 64, CHARING CROSS.]

[MANUFACTORY, 127, LONG ACLI-

WAREHOUSE, 64, CHARING CROSS.]

### A NEW SYSTEM OF SCALES OF EQUAL PARTS.

coplicable to various purposes of Engineering, Architectural, and General SIENCE. Illustrated by a fac-simile of the scales on copper-plate. By CHARLES GULZAPPFEL. 8vo. cloth, Price 2s. 6d. Published by JOHN WEALE, London. Sold by HOLTZAPFFEL & Co., Engine, Lathe, and Tool Manufacturers, 64. Charing Cross, and 127 Long Acre, London.

Mr Houtzappfel could not have done a better service for the profession, than turning his attention is construction of scales suitable for their purposes.—We have for many years been in the habit of year sults made of paper, both for estimating and drawing, on account of their convenience.—We have say carfully examined several of the scales, and have much pleasure in testifying their accuracy and with:—The Civil Engineer and Architects' Journal.

### HOLTZAPFFEL AND CO.'S.

### ENGINE-DIVIDED SCALES.

APPLICABLE TO

### Engineering, Architectural, and Beneral Science.

As the least expensive fabric, each scale is ruled in the Dividing Engine, on a different p of card paper, 18 inches long, the figures and inscription having been previously nated dry. By this arrangement the confusion of crowded scales is entirely avoided, and any of them may be applied directly to the drawing, or compared with one another, whout the employment of the compasses. The material of the scales and of the \*\*\*ing paper being IDENTICAL, they will be found well adapted to the majority of the \*\*\*\*ings used in common practice. Numerous experiments on this head are detailed in the pamphlet.

### ORDINARY DRAWING SCALES.

A series of 24 scales, containing the usual reductions of the foot, from one sixteenth of an inch to 6 inches the foot, including three lines of inches, divided into eighths, tenths, and twelfths, and the English foot

### CHAIN SCALES.

A series of 12 scales in chains and links, namely, 1, 12, 2, 3, 4, 6, 8, 10, 16, 20, 30, 40, chains to the interest and also scales of chains and miles expressed in feet.

### PROPORTIONAL SCALES.

A series of 25 Proportional Scales, for the enlargement and diminution of drawings and models, so as suit all transpositions of scale, required by the limitation of the drawing paper, the copper plate, or the materials to be used in the Lathe or otherwise. The series gives 400 distinct and different ratios proportion, which are given in a tabular form in the Pamphlet.

### COMPARATIVE SCALES.

A series of 24 Comparative Scales, by which any length in Berlin, Brussels, English, Florence, and Leipsic, Lisbon, Munich, Neapolitan, Polish, Rhimeland, Roman, Sicilian, Spanish, Swedish, settinan, Vienna, measures, whether in feet, bracchi, palms, inches, or parts, can be transposed on settion into corresponding quantities, expressed in any other of the linear measures of the series. As same method is equally applicable to the transposition of the measures, weights, moneys, miles, as same method is equally applicable to the transposition of the measures, weights, moneys, miles, as same of the National Standards given in Kelly's CAMBET.

A series of 24 Scales for showing the comparative bulks and weights of equal quantities of the metals. A series of 24 Scales for showing the comparative bulks and weights of equal quantities of the metals.

Any of the above, and many other Scales (fully described in the Pamphlet), graduated on separate slips ford Board, 18 inches long, at 9s. the dozen, or separately, at 1s. each. If ruled to order, 2s. each. Cases covered with cloth, for one dozen, 1s. 6d.; for two dozen, 2s. each.

### THE LIBRARY, SKETCHING OR POCKET-BOOK SCALE.

A rectangle of card, 4½ by 23, cut out in the annexed form, and divided on the several leads it combines the Protractor, and all the usual Scales for Drawing, and it may be also set square, or bevil, parallel rule, Marquois Scale, &c. Price, on card, 3s., 4s., according to the number of graduations.



### THE ODONTOGRAPH,

arented by the Rev. R. WILLIS, A.M., F.R.S., Jacksonian Professor, Cambridge, &c.

This is an instrument of easy application, used for describing the teeth of wheels by circular area, so Shanytwo wheels of a set may ork truly together. Price of the Odontograph on card and varnished, Sa.

The theoretical explanation of this system of teeth, which has been extensively adopted by practical men,
be found in the Trans. Inst. Civil Figineers, Vol. II., and in Willis's Principles of Mechanism, 1842.



This little Printing Press is made of mahogany, and stands in the small space of 11 by 8 inches. It is capable of printing a page 7 by 6 inches, and works so easily that a child may use it on the parlour table. A small type case accompanies it, containing a font of about 2500 types, neatly arranged in three drawers wit appropriate divisions; a fourth drawer serves for the furniture, inking tablet, &c: and to these are added the necessary tools, so as to render the whole complete. Should it be required, the type-case will contain a duplicate supply of type is addition to that usually furnished, and which doubles the efficiency of the apparatus at a slight additional cost.

The above apparatus is well adapted to the amusement and education of youth, and also to various applications of the inestimable typographic art to the common

concerns of mankind.

CECOMICAL Y

For example.—Companies, institutions, and individuals, have found it convenient for circular letters, invoices, and papers, subservient to the despatch and methodical arrangement of business; naturalists and travellers for short memoirs of scientific researches, or labels for specimens; the friends of education, for disseminating original and other papers; wood-engravers for examining the progress of their blocks: practical printers, for proofs of title-pages, stereotype plates, or cards; and nearly every different pursuit will suggest some new application of this little Press.

### LIST OF PRICES.

SECTION I.—Cowper's Parlour Presses and Apparatus.	
COWPER'S PARLOUR PRINTING PRESS, with a galley-chase, a box of ink, a	£ 1. 4.
composition inking roller, and a distributing tray	1 14 0
SMALL DEAL TYPE CASE, painted, with four drawers; three of them partitioned	•
to contain an assortment of about 2500 types, and a proportionate supply of	
leads and brass rule; the fourth drawer contains reglet, furniture, side and	2 16
foot sticks, quoins, &c. SET OF EXTRAS—comprising transfer compressing stick, hadden forcers, mallet,	
SET OF EXTRAS—comprising transfer composing stick, bodkin, forceps, mallet, shooting-stick, planer, brush, and turpentine for cleaning the type, two quires	
of demy printing paper, cut into suitable sizes for the press, and one pair of	
damping slates	0.13 0
GALLEY CHASE seven inches square inside	(1 4
Total charge for the Plain Parlour Press and Apparatus complete	5 6 0
COWPER'S PARLOUR PRINTING PRESS, japanned and finished in the best	0 9 (1
manner, and fitted with a drawer, in other respects as above .  SMALL MAHOGANY TYPE CASE, with brass lock and handles, in other respects	
as above	4 4 0
SET OF EXTRAS, comprising Transfer Composing-stick, &c., as above	0 12 0
GALLEY-CHASE seven inches square inside	0 4
Total charge for the Best Parlour Press and Apparatus complete	7 2 0
	-
DUPLICATE SET OF 2500 TYPES, and which may be contained in either of the	1 12 0
Shove repor	

### PRICE LIST OF PRINTING APPARATUS-(continued.) SECTION II .- FOLIO FOOLSCAP PRESSES AND APPARATUS. £ 8. d. FOLIO FOOLSCAP PRINTING PRESS, on the principle of Cowper's Parlour Press, suitable to printing the half sheet of Foolscap, or the quarto sheet of Imperial. Measurement of the bed 15 by 10 inches. The press varnished and japanned, complete, with two iron chases, register points, &c. 4 14 6 LARGE DEAL TYPE CASE, with six drawers, and measuring externally 24 inches by eighteen, and 11 inches high, with iron handles, lock and key. Four of the drawers are partitioned after the Printer's method for holding 9000 types of the following varieties .- GREAT PRIMER ROMAN, Specimen No. 9-viz., capitals, figures, points, spaces and quadrats. Pica Roman, No. 13; large and small capitals, lower case (small letters), with accented vowels for printing the foreign languages, figures, points, spaces, quadrats, and space-line leads, complete. BOURGEOIS ROMAN, No. 17; capitals, figures, points, spaces and quadrats. Boundeois Antique, No. 23; capitals, figures, points, spaces and quadrats, Two of the drawers contain space-line leads, furniture, side and footsticks, quoins, and reglet; also a mallet, shooting-stick, planer, bodkin, printer's composing stick 94 inches long, brush for cleaning the type, a pair of thick damping slates, &c., all proportioned to the size of the Foolscap Press 9 9 0 $0\ 10\ 6$ Six-inch composition inking roller in frame and case 0 8 0 Large box of superfine printing ink 15 2 0 Total charge for the Folio Foolscap Press and Apparatus in the less complete form FOLIO FOOLSCAP PRINTING PRESS, exactly like the one last described, but with the following additions, namely, an iron bed half an inch thick, planed quite level and true, to increase the permanent accuracy of the Foolscap Press, and an iron counterpoise, to facilitate the working of the same 7 7 0 LARGE DEAL TYPE CASE with eight drawers, similar to the case with six drawers above described, but three inches higher, and containing a considerably greater supply of each of the kinds of type specified in the foregoing description, together with the addition of Great Primer No, 9, lower case letters, Pica Italic No. 14, capitals, lower case letters, points, and spaces, and Bourgeois Antique No. 23., lower case letters, making the total number of types about 17,000; together with a proportionate increase of space line leads, furniture, &c., and with the addition of 21 pieces of brass rule of three varieties 16 16 0 Six iach composition inking roller, in frame and case 0 10 6 Large box of superfine printing ink 0 8 Composing frame of deal, to receive the drawers of the type-case when in use 0 12 inclined galley of mahogany with moveable bottom , 0 18 0 Four extra chases, two of them with crosses 0.10 27 1 Islai charge for the Folio Foolscap Press and Apparatus in the more complete form LARGER PRESSES ON THE SAME PRINCIPLE. FOLIO DEMY PRINTING PRESS, with iron bed and counterpoise; suitable to printing the half sheet of Demy. Measurement of the bed 20 by 13 inches. The press varnished and japanned, complete, with two chases, register points, &c. 12 12 0 BROADSIDE FOOLSCAP PRINTING PRESS, made entirely of iron, and provided

with screw adjustments to regulate the pressure as required; satisfacts of printing the whole sheet of Foolscap. Measurement of the bed 20 by 15 inches, complete, with four chases, register points, &c	18	18	0
SECTION III.—CASES FOR ADDITIONAL TYPES.			
SMALL TYPE TRAY, 10 by 6 inches, with a selection of about 600 Roman or Italic			
Ever of small size of sither of the numbers 17 to 20	0	15	(
TIPE BOOK 15 by 12 inches, with a selection of about 1500 types, comprising 8 varie-			
lies of small tumes for handings sands for as described in page 55 of pamphics	2	2	(
LARGE TYPE TRAY 22 by 24 inches, partitioned after the mode of the printing	1	4-	
	0	7	ŧ
MUSIC TYPE CASE of deal, painted, uniform in size with the Small Deal Type			
The Music Type Case contains four drawers, partitioned to receive an			
assortment of 2800 music types, of 200 different kinds, as described on page 49		15	
	0	15	
The case with music types complete. The case with music types complete.  CHASE, in a painted case, with cushion, roller, ink, and inking tray	1 0	10	ı

PRINTING APPARATUS FOR THE USE OF AMATEURS. A pamphlet containing full and practical instructions for the use of Cowper's Parlour UNTING PRESS, also the description of larger presses on the same principle, and various other paratus for the Amateur Typographer.—The pamphlet contains likewise numerous specimens plain and ornamental types, brass rules, checks, borders, ornaments, corners, arms, &c. &c. Third Edition, greatly enlarged. 8vo. cloth, Price 2s. 6d.

Ein

APPENDIX (D.)-TO HOLTZAPFFEL & CO.'S GENERAL CATALOGUE

### TURNING AND MECHANICAL MANIPULATION.

### BY CHARLES HOLTZAPFFEL,

ASSOCIATE OF THE INSTITUTION OF CIVIL ENGINEERS, LONDON; HONORARY MEMBER OF THE BOYAL SCOTTISH SOCIETY OF ARTS; CORRESPONDING MEMBER OF THE AMERICAN INSTITUTE OF NEW YORK, ETC.

INTENDED AS A WORK OF GENERAL REFERENCE AND PRACTICAL INSTRUCTION

### ON THE LATHE.

AND THE VARIOUS MECHANICAL PURSUITS FOLLOWED BY AMATEURS.

To be comprised in Six Volumes, Octavo. Published by Holtzapffel & Co., 64, Charing Cross, and 127, Long Acre, London.

### VOL. L

MATERIALS, THEIR DIFFERENCES, CHOICE, AND PREPARATION; VARIOUS MODES OF WORKING THEM, GENERALLY WITHOUT CUTTING TOOLS.

Introduction-Materials from the Vegetable, the Animal, and the Mineral Kingdoms-Their uses in the Mechanical Arts depend on their structural differences, and physical characters. The modes of severally preparing, working, and joining the materials, with the practical descrip tion of a variety of Processes, which do not, generally, require the use of Tools with cutting edges.

THE PRINCIPLES OF CONSTRUCTION, ACTION, AND APPLICATION, OF CUTTING TOOLS USED BY HAND; AND ALSO OF MACHINES DERIVED FROM THE HAND TOOLS.

The principles and descriptions of Cutting Tools generally—namely, Chisels and Planes, Turning Touls, Boring Tools, Screw-cutting Tools, Saws, Files, Shears, and Punches. The hand tools and their modes of use are first described; and subsequently various machines in which the hand processes are more or less closely followed.

### VOL. III.

ABRASIVE AND MISCELLANEOUS PROCESSES, WHICH CANNOT BE ACCOM-PLISHED WITH CUTTING TOOLS.

Grinding and Polishing, viewed as extremes of the same process, and as applied both to the production of form, and the embellishment of surface, in numerous cases to which, from the nature of the materials operated upon, and other causes, Cutting Tools are altogether inapple cable. Preparation and Application of Varnishes, Lackers, &c.

### VOL. IV.

THE PRINCIPLES AND PRACTICE OF HAND OR SIMPLE TURNING.

Descriptions of various Lathes;—applications of numerous Chucks, or apparatus for fixing works in the Lathe. Elementary instructions in turning the soft and hard woods, ivory and metals and also in Screw-cutting. With numerous Practical Examples, some plain and simple, others difficult and complex, to show how much may be done with hand tools alone.

### VOL. V.

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With numerous Practical Examples.

### VOL. VI.

THE PRINCIPLES AND PRACTICE OF AMATEUR MECHANICAL ENGINEERING

Lathes with Sliding Rests for metal turning, Self-acting and Screw-cutting Lathes Profiles Machines—Planing Engines—Key-groove, Slotting and Paring Machines—Wheel-cutting and Shaping Engines, &c.

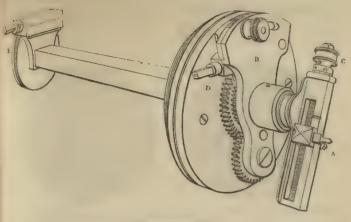
### With numerous Practical Examples.

\*.\* The irst, Second, and Third Volumes of this work, are written as accompanying books, and have one Index in common, so as to constitute a general and preliminary work. We addition to which of any of the other volumes, will render the subject complete for the three classes of Amateurs referred to in the Introductory Chapter.

A few additional copies of the Index have been printed for the convenience of those who may desire to bind the Index with Vols. I. and II.

Vol. I., Octavo, cloth. Price 15s. ,, 20s, Vol. II., " 33-158. Vol. III., "

### ELLIPTICAL CUTTING FRAME.



MANUFACTURED BY

### HOLTZAPFFEL & CO.,

64, CHARING CROSS, AND 127, LONG ACRE, LONDON.

THE ELLIPTICAL CUTTING FRAME, invented by CAPTAIN ASH, H.E.I.C.S., is employed in the lathe, for ornamenting turned surfaces with elliptical figures, after the same general method that the eccentric cutting frame is employed for producing circular figures on similar surfaces; viz., the object to be ornamented is fixed on the lathe mandrel, and motion is given to the tool by the Elliptical Cutting Frame, which is fitted to the receptacle of the sliding rest, and driven by a band leading from the overhead motion.

The Elliptical Cutting Frame is capable of producing ellipses of all proportions, from a right line to a circle, according as it may be adjusted; and the ellipses may be arranged either in circular order by the employment of the division plate, or in rectilinear order by the motion of the sliding rest; or the two movements may be sombined at pleasure. An almost infinite variety of patterns of a highly ornamental

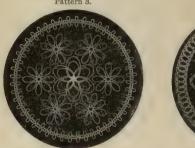




The Same of the sa

### ELLIPTICAL CUTTING FRAME.

character will, therefore, be produced by the elliptical movement alone. In addition to which, the instrument is adapted to produce epicycloidal patterns of 4 loops, similar to those produced in the geometric chuck; these looped figures may likewise be made in all proportions, and be placed in any positions.





From these comprehensive powers of the Elliptical Cutting Frame, it results that any desired arrangements may be produced of circles, ellipses, right lines, or 4-looped figures: the instrument is, therefore, a most desirable addition to all lathes for ornamental turning, and, if required, its powers may be still further increased by the addition of other epicycloidal patterns, or by combining its movements with those of the eccentric chuck or other apparatus for ornamental turning.

### General Remarks on the Action of the Elliptical Cutting Frank.

The elliptical movement of the tool is produced as in the geometric pen, and in Ibbetson's geometric chuck, by the combination of two circular movements in opposite directions, the one of which travels at double the angular velocity of the other In the Elliptical Cutting Frame this is effected by the train of wheels seen in the front of the instrument, which are so arranged that the eccentric frame carrying the tool A makes two revolutions to the right, while the radial flange B makes one revolution to the left; and the proportions of the ellipse described by the tool depend upon the relative degrees of eccentricity given to A and B. Thus, when A and B are both placed central, the tool has no eccentricity, and merely produces a dot. When eccentricity is given to A alone, the tool describes a circle, the radius of which will depend upon the movement given to the screw of the eccentric frame, under the guidance of the micrometer head C, which has ten divisions. Supposing the eccentricity to be equal to 4 turns of the screw, or 40 divisions of the micrometer head, and that it is desired to convert the circle into a straight line, the flange B is also moved 40 divisions, by means of the adjusting screw D, upon which a winch handle is temporarily fitted.

Any series of ellipses between the straight line and the circle may be described by reducing the eccentricity of the radial flange B. Thus, if it be shifted 5 divisions between each figure, a series of 7 ellipses will be produced, gradually advancing from the right line to the circle. Any other number of divisions may be adopted in the same manner; the instrument being so adjusted that equal numbers of divisions on B and C always produce the straight line. Series of concentric ellipses are produced by adjusting both A and B; thus, in pattern 1, A was shifted 4 divisions, and B two divisions between every cut.

### ELLIPTICAL CUTTING FRAME.

The radial action of the flange B, however, has the effect of placing the ellipses oblique to each other, instead of parallel, and this requires some compensation to be involuced. Captain Ash compensated the obliquity by shifting the division plate of the lathe a proportionate quantity. Subsequently, the spindle was extended through the stem of the instrument, and a graduated disk fixed on the end of the spindle was employed for the compensation, but which is more conveniently and accurately effected by means of the worm wheel and tangent screw movement, suggested by H. Perigal, Esq., F.R.A.S. The tangent screw E is moved by a winch handle, and has a micrometer so arranged, that the movement indicated by one division; and therefore, to ensure the parallelism of the ellipses, it is only necessary employed to give any angular position to the ellipses that may be required. Thus, the worm wheel having 150 teeth, 37½ turns of the tangent screw will place any of the figures at right angles to their former positions.

The 4-looped figures are produced by changing the train of wheels. For the ellipses, the train consists of a fixed wheel of 48 teeth, leading into one of 24, to which is attached a 36 wheel, leading into another 36 wheel fixed to the axis carrying the eccentric frame A. For 4-looped figures, the relative velocity of the eccentric frame is doubled by employing wheels of 48 and 24 teeth, instead of the sair of 36 wheels. The adjustment of the 4-looped figures, for eccentricity and estion, is effected in the same general manner as the adjustment of the elliptical

figures.

in the illustrations shown on the previous pages, Pattern 1 consists of ellipses my; the two central series are placed at right angles by the division plate of the athe. The positions of the outer series are also determined by the division plate, and the ellipses are made to intersect, by moving the slide rest screw between every out. Pattern 2 is produced by the right line and 4-looped movements. The cositions of the right lines are determined by the division plate, and the series of En 4-looped figures are interposed either by the tangent screw E, or by the division late. Pattern 3 consists of ellipses and looped figures. The positions of the ellipses onstituting the central portion of the pattern, and the small 4-looped figures of which the border is composed, are given by the division plate and sliding rest. The general position of the intermediate series of 4-looped figures is also given in the ame manner; but the figures being eccentric, are duplicated by shifting the tangent Frew E 183 turns. Pattern 4 shows a modification of the 4-looped figure in which the eccentricities of A and B are in the proportion of 1 to 8. Thus, in producing ach of the sixteen squares of the central figure, A was 3, and B 24, divisions ecceninc, and the lines were doubled by reducing the eccentricity of A 1/4, and B 2 livisions. The local positions of the squares were determined by the division plate, out 8 were worked with E central, and for the other 8, E was shifted 18% turns. The border consists of 72 squares, for which A was one, and B 8 divisions eccentric, 36 of the squares were worked with E inclined 98 divisions to the right, and for the intermediate 36 squares, E was inclined an equal quantity to the left.

13 Ent

### HOLTZAPFFEL & CO.'S PEN-HOLDER FOR ENFEEBLED HANDS.



THE Pen-holder for enfeebled hands was invented for the use of those persons who, from age, rheumatism, gout, stiffness in the joints of the fingers, defects in the nerves of the hands, paralysis, or other infirmity, are deprived of the free use of the fingers, so that they cannot hold a pen in the customary position.

The instrument is represented in three views: in the center as closed for the pocket; on the left as opened for use; and on the right in the act of being used. The shaft of the Pen-holder for enfeebled hands is held quite vertically in the central part of the hand, and grasped by the whole of the fingers; this position the most infirm can usually command. The lower extremity of the shaft is allowed to rest firmly upon the paper, and thereby support the hand, whilst the socket that actually receives the pen or nib is jointed to the vertical shaft at about the angle of 45 degrees, and is pressed on the paper by a feeble spring, so as to assimilate in the closest manner to the action of the ordinary quill pen. The Pen-holder for enfeebled hands will be used with more freedom when neither the hand nor the arm rest upon the paper, but the little finger should almost touch the sloping socket.

The Pen-holder is adapted to receive a gold, steel, or quill pen, at the option of the individual; and the instrument may be carried in the pocket as an ordinary pencil-case. The purpose of the screw at the bottom of the holder is to adapt the length of the vertical shaft to the projection of the pen, as when the latter touches the paper, the length of the central shaft should be such as just to give the shaft the vertical position. Whereas, if the pen should project too much, or too little, it will be needful to incline the shaft to, or from, the individual, which it is desirable to avoid.

### PRICE LIST

OF

PRINTING APPARATUS FOR THE USE OF AMATEURS.

MANUFACTURED AND SOLD BY

HOLTZAPFFEL & CO.,

Engine, Lathe, and Cool Manufacturers,

64, CHARING CROSS, & 127, LONG ACRE, LONDON.



This little Printing Press is made of mahogany, and stands in the small space of 11 by 8 inches. It is capable of printing a page 7 by 6 inches, and works so easily that a child may use it on the parlour table. A small type-case accompanies it containing a fonte of about 2500 types, neatly arranged in three drawers with appropriate divisions; a fourth drawer serves for the furniture, inking tablet, &c.; and to these are added the necessary tools, so as to render the whole complete. Should it be required, the type-case will contain a duplicate supply of type in addition to that usually furnished, and which doubles the efficiency of the apparatus at a slight additional cost.

The above apparatus is well adapted to the amusement and education of youth, and also to various applications of the inestimable typographic art to the common

concerns of mankind.

For example.—Companies, institutions, and individuals, have found it convenient for circular letters, invoices, and papers, subservient to the despatch and methodical arrangement of business; naturalists and travellers for short memoirs of scientific researches, or labels for specimens; the friends of education, for disseminating original and other papers; wood-engravers, for examining the progress of their blocks: practical printers, for proofs of title-pages, stereotype plates, or cards; and nearly every different pursuit will suggest some new application of this little Press.

### LIST OF PRICES.

SECTION I.—Cowper's Parlour Presses and Apparatus.	
COWPER'S PARLOUR PRINTING PRESS, with a galley-chase, a box of ink, a composition inking roller, and a distributing tray  SMALL DEAL TYPE CASE, painted, with four drawers; three of them partitioned to contain an assortment of about 2500 types, and a proportionate supply of	£ s. d.
leads and brass rule; the fourth drawer contains reglet, furniture, side and foot sticks, quoins, &c.  SET OF EXTRAS—comprising transfer composing stick, bodkin, forceps, mallet, shooting-stick, planer, brush, and turpentine for cleaning the type, two quires of demy printing paper, cut into suitable sizes for the press, and one pair of	2 16 0
damping slates. GALLEY CHASE seven inches square inside	0 4 0
Total charge for the Plain Parlour Press and Apparatus complets	5 6 (
COWPER'S PARLOUR PRINTING PRESS, japanned and finished in the best manner, and fitted with a drawer, in other respects as above	3 3 U
SMALL MAHOGANY TYPE CASE, with brass look and handles, in other respects as above  SET OF EXTRAS, comprising Transfer Composing-stick, &c., as above	4 4 0 0 12 0
GALLEY-CHASE seven inches square inside .  Total charge for the Best Parlour Press and Apparatus complete	7 2 0
DUPLICATE SET OF 2500 TYPES, and which may be contained in either of the	1 12 0

### PRICE LIST OF HOLTZAPFFEL & Co.'s PRINTING APPARATUS.

(continued.)			
SECTION II.—Folio Foolscap Presses and Apparatus.			
FOLIO FOOLSCAP PRINTING PRESS, on the principle of Cowper's Parlour Press, suitable to printing the half sheet of Foolscap, or the quarto sheet of Imperial. External measurement of the press 21 by 11 inches, measurement of the bed 15 by 10 inches, with two iron chases, register points, &c. The press varnished	4-14	e e	
and Japanned, complete LARGE DEAL TYPE CASE, with six drawers, and measuring externally 2 unches by 18, and 11 inches high, with iron handles, look and key Four of the drawers are partitioned after the Printer's method for holding 9000 types of			
ab a following variation			
GREAT PRIMER, ROMAN Specimen No. 9 viz., capitals, figures, points, spaces,			
PKA, ROMAN, No. 13; large and small capitals, lower case (small letters), with accented vowels for printing the foreign languages, figures, points, spaces, quadrats, and			
space line leads, complete.  Bouregois Roman, No. 17; capitals, figures, points, spaces, quadrats, &c.			
Boussess Antique, No. 23; capitals, figures, points, spaces, quarters, cc.  Two of the drawers contain space line leads, furniture, side and foot sticks, quoins, and reglet; also a mallet, shooting stick, planer, bodkin, printer's composing stick  % inches long, brush for cleaning the type, a pair of thick damping slates, &c.,			
all proportioned to the size of the Foolscap Press	9 0 1		U B
Large box of superfine printing ink		8	
Total charge for the Folio Foolscap Press and Apparatus in the less complete form	15	2	0
FOLIO FOOLSCAP PRINTING PRESS, exactly like the one last described, but with the following additions, namely, an iron bed half an inch thick, planed			-
anite level and true, to increase the nermanent accuracy of the Foolscap Fress,			
and an iron counterpoise, to facilitate the working of the same	7	7	n
LARGE DEAL TYPE CASE with eight drawers, similar to the case with six drawers above described, but three inches higher, and containing a considerably			
greater supply of each of the kinds of type specified in the foregoing descrip-			
tion, together with the addition of Great Primer No. 9, lower case letters, Pica Italic No. 14. capitals, lower case letters, points, and spaces, and Bourgeois			
Antique No. 92 lower core letters, making the total number of types about			
17 000, together with a proportionate increase of shace line teads, luminume,			
&c., and with the addition of 21 pieces of brass rule of three varieties, and all lines long	16	16	0
Str inch composition inking roller in frame and case			6
Large box of superfine printing ink	0		0
Composing frame to receive the drawers of the type case when in use Laclined galley with moveable bottom	0	18	0
Four extra chases, two of them with crosses	-		0
Total charge for the Folio Foolscap Press and Apparatus in the more complete form	27	13	6
SECTION III—CASES FOR ADDITIONAL TYPES.			
SMALL TYPE TRAY, 10 by 6 inches, with a selection of about 600 Roman or Italic			
types of small size, of either of the numbers 17 to 20		15 5	0
The empty type tray TYPE BOOK 15 by 12 inches, with a selection of about 1500 types, comprising 8 varie-		_	Ť
ties of small types for headings, cards, &c., as described on page 55 of pampage.		12	
The empty type book LARGE TYPE TRAY 22 by 24 inches, partitioned after the mode of the printing	1	12	
office, for containing larger quantities of type of any kind; namely, the tray	١.		
without types MUSIC TYPE CASE of deal, painted, uniform in size with the Small Deal Type	1	7	Ų
Case described on page 11 The Music Type Case contains four drawers, the	1		
Whole of which are partitioned to receive an assortment of 2800 masic syposi			
of 200 different kinds, as described on page 49 of the pamphlet. The case with music types complete	1	5 15	6
HAND CHASE in a pointed case with cushion, roller, ink, and inking tray	1	15	
The Hand Chase alone	. (	0 7	6

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### PRINTING APPARATUS FOR THE USE OF AMATEURS.

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patterns.

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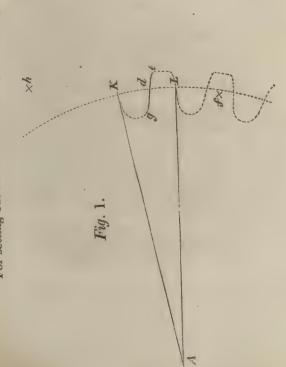


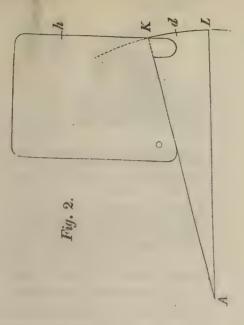
### THE ODONTOGRAPH,

Invented by the Rev. R. WILLIS, A.M., F.R.S., Jacksonian Professor, Cambridge, 4c.

This is an instrument of easy application, used for describing the teeth of wheels by circular arcs, a that any two wheels of a set may work truly together. Price of the Odontograph on card and varnished, as The theoretical explanation of this system of teeth, which has been extensively adopted by practical real be found in the Trans. Inst. Civil Engineers, Vol. II., and in Willis's Principles of Mechanism, local control of the Control o

For setting out the Forms of Teeth, so that any two Wheels of a set may work truly together.





## EXPLANATION OF THE INSTRUMENT.

Let A, fig. 1, be the center of a wheel, KL a portion of its pitch circle, gde the side of one of its teeth or cogs. According to the system now proposed, the portion de of the tooth which extends a center f, and the portion dg which lies within the pitch circle is an arc of a circle described from a center k. The use of the scales and tables is to determine with facility the position of these centers f and k, and the length of their radii hd, fd, for a wheel of any required pitch and number of teeth. Teeth formed by these rules possess the property of causing any two wheels of the same pitch to work correctly together. One example will explain the mode of using this instrument. Let it be required to describe the form of a tooth for a wheel of 39 teeth of 3 inches pitch.

Describe an arc of the required pitch circle, and set off upon it KL, fig. 2, equal to the pitch, and bisected in d; draw radial lines AK, AL. For the arc within the pitch circle apply the slant edge of the scale to the radial line AK, placing its extremity K on the pitch circle, as in the figure. In the table, headed Centers for testh within the pitch circle\*, look down the column of 3 inch pitch, and opposite to 30 teeth, which is the nearest number to that required, will be found the number 49. The point indicated on the drawing board by the position of this number on the scale of equal parts marked, Scale of centers of testh, within pitch circle, is the center required, from which the arc must bu drawn with a

The center for the arc de, which lies outside the pitch circle, is formed in a manner precisely similar, by applying the slant edge of the scale to the radial line AL. The number 21 obtained from the table of Centers for teeth outside the pitch circle will indicate the position of this center upon the Scale of centers for teeth, untside the

To facilitate the operation of spacing the teeth, and metting out their lengths, the spare edges of the cardboard are occupied by two

other scales, on one of which is marked the widths of the teeth, &c., of all the pitches of the tables, and on the other the extents of the teeth beyond and within the pitch circle, according to the established proportions employed by the best millwrights.

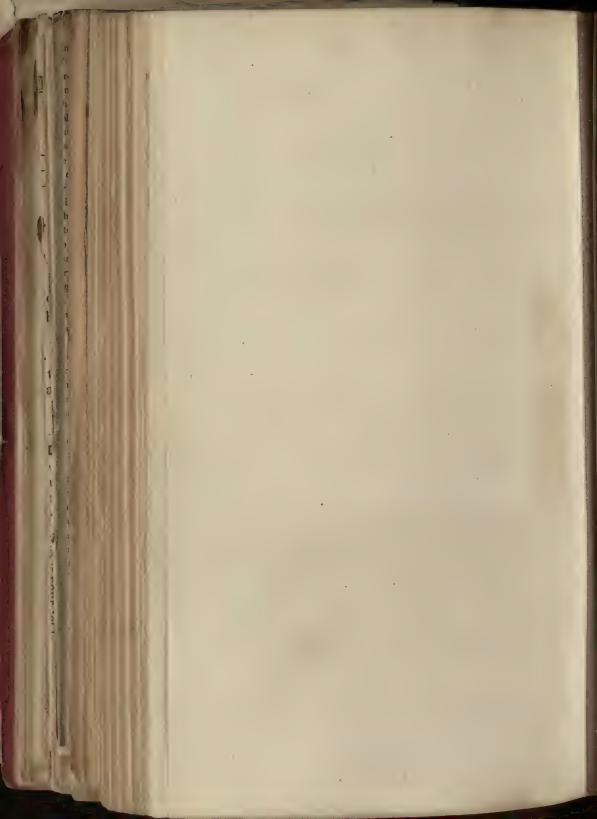
The radius of the wheel may be found, by help of the following table and rule. Multiply the number corresponding to the given pitch in this table by the number of teeth required, the product will be the radius of the pitch circle in inches and decimals. Thus, for a wheel of 29 teeth of 3 inches pitch, multiply ·4774 by 29, and the radius is 13°84 inches.

Factors.	.1989	1591	.1193	-0994	.0795	.0597	-0398
Pitch.	17	-	00)-01	কাতে	-100	තුක	44
Factors.	.5570	4774	-3979	.3581	.3183	.2785	-2387
Pitch.	31	က	2,	214	67	204	-ico

The curve gde, fig. 1, is also true for an annular wheel of the same number of teeth, g becoming, of course, the point of the tooth, and e its root. For a Rack, the pitch line KL, fig. 2, will be a straight line, and AK, AL, be drawn perpendicular to it, at a distance from each other equal to the pitch. The numbers for pitches not inserted in the table, may be obtained from the column of some other pitch, by direct proportion. Thus for 4 inch pitch, by doubling the numbers in the column of the 2 inch pitch, for  $4\frac{1}{2}$  by doubling  $2\frac{1}{4}$ , and so on; or if the difference be small, the column belonging to the nearest pitch may be employed, without a serious error; or more accurately a number may be taken half way between those given in the two nearest columns.

Invented by Professor Willis, Cambridge, and Constructed by Holtzapffel & Co., London. Price, on Card-board varnished, Five Shillings.

Price, in Brass, with printed table, on milled-board and varnished, One Guinea.



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Patent Refrigerator,



Patent Store Vot,

AND

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In offering these inventions to the notice of Practical Brewers, the Patentee has every confidence that they will regard them as supplying the deficiencies which have long existed, as they have been discovered by many years practice and experience, and are not the result of theoretical opinions.

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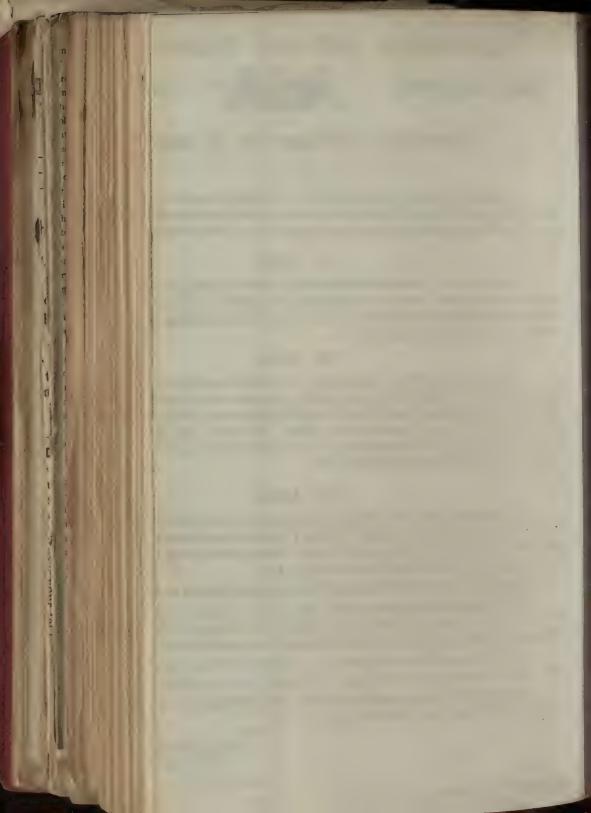
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En offrant à l'attention des brasseurs les susdits perfectionnements dans l'appareil de la brasserie, qui sont le resultât non pas d'opinions théorétiques, mais d'une longue expérience, l'inventeur se flatte d'avoir suppléé à des desiderata qui se sont depuis longtemps fait sentir.

I.

Le distributeur de chaleur donne un pouvoir absolu sur la chaleur et l'écoulement du moût. Depuis le commencement le brasseur est à même d'opérer d'une manière uniforme, avec une chaleur toujours augmentante jusqu' à ce que le dernier baril de moût est écoulé; et ainsi d'obtenir tout l'extrait d'une seule opération, pour les bières blanches même de la première qualité.

### II.

Le Réfrigérateur est sans contredit supérieur aux inventions de même nature qui ont paru jusqu' à ce jour. On peut l'appliquer ou aux bacs de houblon, ou bien aux brassins des appareils connus. On peut s'en servir de suite, et par la simplicité de sa forme il se nettoie en très peu de temps avec la plus grande facilité. Le prix d'un réfrigérateur pour refroidir dix barils par heure, se monte à £25. et ainsi en proportion, pour ceux de dimensions plus ou moins grandes.

### III.

Les cuves-matiere ont pour but de reduire autant que possible la surface de bière exposée à l'atmosphère. La dimension de cette surface dans les plus grandes cuves est de trois pouces de diamètre, et sur cet espace est un couvert hermétiquement fermé, avec une valve de sureté pour l'échappement des gazes engendrés par la chaleur. Il serait de l'intérêt des brasseurs de recommander cette cuve à leurs pratiques, l'inventeur pouvant garantir la préservation de la bière contenue dans ces cuves pendant les plus grandes chaleurs.

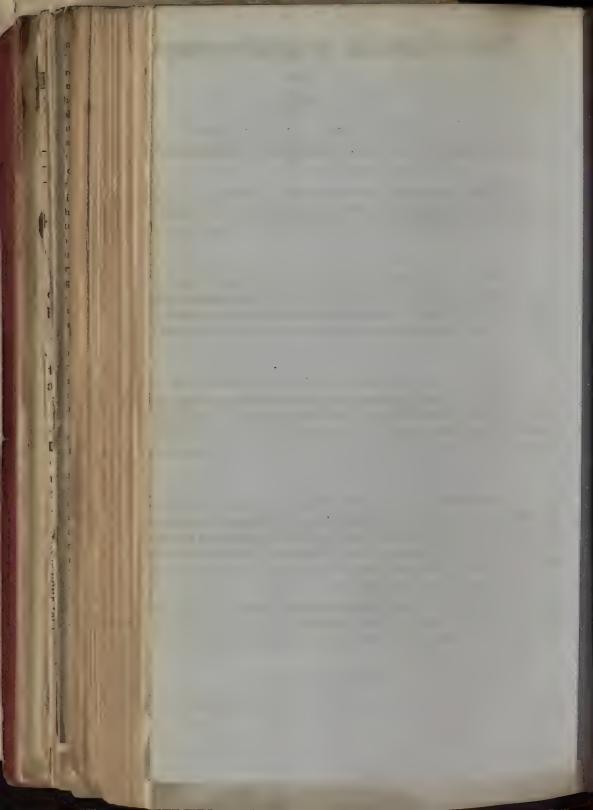
Par le moyen de ces trois perfectionnements, aucune acidité ne peut survenir pendant la macération, et la contamination pendant le refroidissement et la fermentation est absolument prevenue. Pour les adopter il n'est pas nécessaire de faire aucun changement dispendieux, et l'espace d'une seule journée suffit pour les ériger.

Quant 'aux renseignements nécessaires, s'addresser à

JAMES LAWRENCE,

Patent Brewery,

Colubrook, Middlesex.



## Patent fuer den Kefrigerator, Patent fuer die grosse Kufe.

UND

## Eleichmaessiger Maerme-Fertheiler in dem Meisch-Fasse.

Indem der Erfinder diese seine Entdeckungen den praktischen Brauern mittheilt, ist er zu gleicher Zeit versichert, dass solche die lang bestehenden Ermangelungen ersetzen, da solche nicht das Resultat theoretischer Versuche, sondern das der Erfahrungen vieler Jahren sind.

### 1stens. ZERBREIEN.

Die Wichtigkeit des gleichmässigen Wärme-Vertheilers besteht darin, dass völlige Gewalt über die Wärme und Ableitung des Breies gegeben wird. Vom Anfange an ist der Brauer im Stande allmählig mit der zunehmenden Hitze fortzuschreiten, bis das lezte Fass der Wurze hinweggenommen, und ferner das ganze Extractum in Einer Wurze zu erhalten, indem er auf einmal alle Aele verbreiet, welche nicht 35 Pfunde überwiegen.

### 2tens. KUEHLUNG.

Bei der Anordnung des Refrigerators ist der Brfinder, sehr sorgfaltig zu Werke gegangen, um alle Schwierigkeiten, welche seit dessen Einführung in die Bruuerei und Distillerei bestanden, zu ver-Bei der Einfachheit dieser Anordnung kann jeder Theil davon schnell und auf das genaueste gereinigt werden. Er besizt die Kraft, dass er entweder direkt vom Hopfen-Fasse kühlt, oder auch die Der Preis fur einen, welcher 10 Fässer (barrels) vollständig kühlet; ist 25 Guineen, und in demselben Verhältnisse bis 100 per Stunde, und kann vollständig und zum augenblicklichen Gebrauche bereit, nach jeder Brauerei verschickt werden.

### Stens. AUFBEWAHRUNG.

Der Vortheil der grossen Kufe besteht darin, dass sie die Oberfläche des Aeles, welches in dem indem es von dem Einflusse der Luft beschüzt wird, leitet es die darin enthaltene Wärme hinweg, bildet grossen Fasse ist, 3 Zoll im Durchmesser vermindert, und in kleinern Fässern von 1 bis 2 Zoll, und einen luftdichten Deckel, und wenn hinweggenommen, lässt die Oeffnung für einen Mann zurück, um das Fass zu reinigen.

Für Privat Keller wird dieses besonders nützlich gefunden werden, da es die Aele im wärmsten Wetter beschiizt.

zu vermeiden, und nachdem es gegährt, kann es mit Sicherheit aufbewahrt, und zwar in allen Jahres-Die Absicht des Erfinders ist, dem Brauer völlige Macht über das ganze Verfahren des Brauens, und zur guten Erhaltung des Biers zu geben, Saure in der Brau-Kuse, wie auch Verderben im Kühlen zeiten und Gegenden.

Diejenigen, werden Brauhäuser errichten, oder alte verbessern, werden darauf aufmerksam gemacht, dass sic, wenn davon Nachricht gegeben, Pläne auf das wissenschaftlichste und genaueste gezeichnet, erhalten können.

Um oben genannte Verbesserungen in Braucreien und Distillereien einzuführen, sind keineswegs ausserordentliche Veränderungen erforderlich, da das Ganze zusammen in Einem Tage eingerichtet werden

Addresse,

JAMES LAWRENCE,

Patent Brewery,

Combrook, Middlesex.





## Description of their Anchivery, as shown at the Great Exhibition, 1851.

## 1.- Is one of our PATENT INCLINED HACKLING MACHINES FOR LONG FLAX. No.

for the required number of cuts, after which it rises perpendicularly, and is passed forward to cach succeeding hackle, until delivered from the trough. The superiority and simplicity of this over the Machines with motions for turning the This Machinc has many most important advantages: it not only keeps the Elax straight and brings it down perfect on the sheet, but commences at the point of the Plax, and gradually descends to the mouth of the holder, where it rests holders, will be seen at once; as the latter not only drags away the Flax in rolling it over the hackles, but must make until delivered from the trough. all the Tows objectionable.

## 2. -SPIRAL OR SCREW GILL SPREADER, FOR LONG FLAX OR SHORT HEMP. No.

it they can sit or stand comfortably, as they please; whereas on the old plan, or "Long Board" spreading, one girl was The Spiral Gill Machine is almost in every case adapted for Drawing and Roving Flax, Tow, Hemp, Wool, and Waste simple contrivance was perhaps the greatest boon ever bestowed on the poor females employed in spreading Flax, for by This beautiful and now general plan was invented and patented by our Mr. Lawson and Mr. Westlx in 1838. obliged to walk at least from twenty to thirty miles per day, in a constrained position, for six or seven shillings per The Short Spreading or "Short Board," was invented by Mr. WESTLY in 1821, at his Mill, near Leeds. week, and then could only spread one-teuth part of the work she now does sitting. Bilk.

# No. 3.—SPIRAL OR SCREW GILL SECOND DRAWING FRANCE, FOR LONG FLAX OR SHORT HENP.

## No. 4. -SPIRAL OR SCREW GILL ROVING FRAME, FOR LONG FLAX OR SHORT HEMP.

This improvement is found of immense advantage Fitted up with our improved Steadying Bar for Spindle Tops. for long and heavy Flyers.

### No. 5.-CIRCULAR IRON TOW CARD.

Card now exhibited has six Workers and seven Clearers, all clothed with the Patent Iron Clothing, suitable for Carding It has also an entirely new arranged " Boxing in," which prevents a great deal of Tow being The first Carding Machine of this diameter was made by the Exhibitors for a Firm in St. Petersburg, in 1841. It has also attached a Circular Gill Drawing. Tow for Sail Cloth Yarns.

## No. 6. -- SPIRAL OR SCREW GILL TOW DRAWING FRAME.

This Machine is fitted up with the Patent Double Screw, Invented and Patented by our Firm and Mr. Robinson. On examination the Double Screw will be found a most perfect and beautiful motion for elongating Tow or other short fibrous substances, as it not only turns off considerably more work, but enables the Spinner to reduce his draught-a sure way of producing good and sound Yarns.

No. 7.—SPIRAL OR SCREW GILL TOW ROVING WITH PATENT DOUBLE SCREWS Fitted up with our Steadying Bar for Spindle Tops.

No. 8.-A DRY TOW SPINNING FRAME-ONE HUNDRED SPINDLES only economises power but always keeps up the speed of the Spindles, even when one Spindle is stopped, which it Calculated for Spinning Sail Cloth Yarns. This Frame has our improved Tape motion for driving Spindles, which entirely prevents the possibility of having slack twisted Yarn. The Length of Tape and the manner it is driven, not does not on the old plan-

No. 9.-DOUBLE FLAX CUTTER.

No. 10 & 11.—A PAIR OF PATENT CYLINDER HACKLING MACHINES.

easy machine to work, it also avoids much wear and tear, and economises space, outlay, and power. the doffing, combined with the circular motion and the application of two troughs instead of one, makes it an extremely most important in this class of machinery is the Circular Machines now exhibited; the simplicity and effective plan of Since the invention and introduction of Machines for Hackling Flax, many patents have been obtained, but the

No. 12.—SPIRAL OR SCREW GILL SPREADER FOR CUT FLAX.

No. 13.—SPIRAL OR SCREW GILL SECOND AND THIRD DRAWING FRAME.

No 14.—SPIRAL OR SCREW GILL SLIVER ROVING FRAME FOR CUT FLAX.

twist. The Sliver Roving as long as it remains dry, possesses all requisite tenacity and freely anwinds from the bobbin, but in passing through the trough in the Spinning Frame, readily admits, with a slight force, of being drawn into Yarn, by Mr. ATKINSON, of the above firm, and the Exhibitors. It is known that the glutinous matter of Flax may be softened by water and hardened by heat; of this fact advantage is taken in order to produce a roving entirely without This process of Roving was invented and patented by Mr. Westry in 1836, but only brought into general use by Messrs. Hives and Arkinson, in Leeds, about six years before the patent expired, when the right was purchased machine at once becomes incomparably more durable, requiring a fourth part of the power, and half the room. with all the fibres perfectly parallel. All the complex arrangements of the Cone Roving, are superseded, and the anything. But in the Sliver Roving there is no difficulty in making a roving of almost any fineness, with little reference twist required to give a roving the necessary cohesion increases in proportion as the number of fibres composing that circumstances sets a limit to the degree, to which a material of a given fineness may be roved, because the quantity of machine is very general in its application. to the quality of the material, because while one fibre can be gived to another, by any portion of its extremity, a roving may be made. The bobbins are so placed that the attendant can doff as the Machine is in motion, thereby producing are broken and scattered by the violence of the action; it is therefore impossible to make a light roving good for roving diminishes, till it accumulates to that quantity that the fibres are prevented from drawing regularly, or if drawn to rove, on the same frame, as many sorts or thicknesses of roving as there are bobbins in the frame. Each Bobbin has in fact its own regulating motion, and this is at all times correct, enabling the Spinner In making a roving in the usual way, the twist in addition to other

No. 15.—FINE SPINNING FRAME.

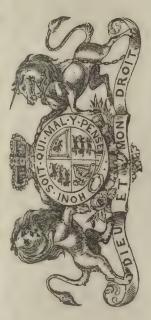
cold water; this could never be accomplished previously to the invention of Sliver Roving, or a roving without Twist. This roving, however fine, is perfectly solid and compact; no fibres in it, when once laid straight, can afterwards be injured and the Yarn acquires a superior lustre, roundness, and strength. The Sliver Roving is drawn with less force than the Twisted Roving, and is, therefore, less liable to make "snarls" in the Yarn. It has also another great disturbed, and as they are placed into the Yarn in the exact position in which they leave the Gills, the material is not advantage: the fibres of Flax and Tow being of various lengths and having an uniform twist upon them, the rollers detaining rollers. thick places in the Yarn; whereas in the Sliver Roving there is a benefit derived from the bruising action of the will naturally retain the longer fibres more effectually than the shorter ones, which will have a tendency to run into With an improved plan of driving Spindles, and also fitted up for spinning the Sliver rove, which is spun through The pressure is supposed to split the fibres laterally and thereby make them fine.

unfortunate necessity, as it appeared to him, to employ hot water in spinning flax. He might well deprecate the practice when he felt the disagreeable and unhealthy air in those mills he visited, and considering also thousands of young people, in all conditions of health, are compelled early every morning and in winter, through frost and snow, to cater into an atmosphere heated to 80° Fahrenheit at the same time saturated with moisture. The amount of the same time saturated with moisture Establishment, where he would have seen several spinning rooms as cool and clear as his own parlour, cater into an atmosphere heated to 80° Fahrenheit at the same time saturated with moisture. The correspondent might well deplore such a necessity; but what would his surprise have been, had he visited Hives and Atkinson's A correspondent of the Morning Chronicle, visiting some of the Leeds Flax Mills, alludes particularly to the ortunate necessity, as it appeared to him, to employ hot water in spinning flax. He might well deprecate the

No. 16 .- A DOUBLE TWISTING FRAME, 21 in. Ptch, 2 in. Traverse, 96 Spindles with Brass Pressing Rollers-has an improved plan of driving the Spindles.

No. 17 .- A DOUBLE WATER FRAME, 21 in. Pitch, 2 in. Traverse, 136 Spindles, fitted up with Self-adjusting Saddle, and an improved plan of driving the Spindles.

No. 18.—FLUTING MACHINE FOR FLUTING ROLLERS, WITH SMALL LATHE ATTACHED.



### MACINDOE'S

# SELF-ACTING MULE OR OPERATOR,

## GREAT EXHIBITION, HYDE PARK,

LONDON.

THE attention of Cotton Spinners, Machine Makers, and others, is respectfully directed to this Mulle, which presents a combination of extremely simple and efficient mechanical movements, for which Letters Patent were obtained in 1849-50, by George Park Macindoe of Glasgow. Its superiority consists in the following points: 1st. — The General Arrangement is very advantageous; the different motions distributed over the whole length of

2d .- The Backing-off motion being worked by Wheels, can be regulated to any extent required by those in the Headstock, affording great convenience for inspection and adjustment.

3d .- The Putting-up motion for the Carriage is very much in advance of anything hitherto attempted, whilst the additional produce of the Mule, resulting from the Backing-off and Putting-up motions, will be charge of the Machine, and is altogether a first-rate movem fully 10 per cent. over Mules with Mangle Wheels.

4th.-The Headstock can be applied in the middle without Cranks or Connecting Rods and Joints for connecting the Guides, which is much superior to the old plan, and can be applied to Hand Mule Carriages more easily than before.

5th.--The Twist can be regulated just as in Hand Mules; that is, with the same certainty: as also the Drag on the Carriage by Wheels.

6th.-The Second Draw is both simple and efficient, and admits of being driven at any desired velocity.

7th .-- The Winding-on of the Yarn is by positive motion, not by friction.

8th.—By the steadiness of the Carriage going up to the Beam, Iron Squaring Cylinders can be dispensed with, thereby requiring less power.

9th.--The accuracy of all the movements is such as gives no trouble in the working of the Mula.

This Mule is well adapted for Spinning Warps, and fine Yarn, 40° up to 180° having been upun on it, and within a few menths past, has been put to work extensively in Glasgow.

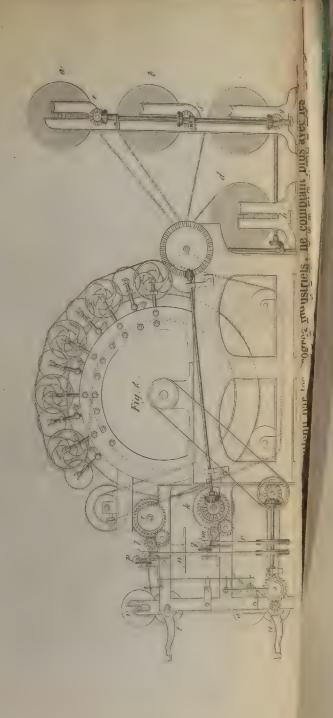
LICENSES TO MAKE IN ENGLAND, for France, Belgium, Russia, and America, granted on application to the Patentee, which Licenses may be exclusive to any one Machine Maker, for the various countries. THE PATENTER IS WILLING TO DISPOSE OF THE PATENT FOR ENGLAND, EITHER IN WHOLE OR IN PART. TO AMERICAN COTTON MACHINE MAKERS, this Self-Acting Operator will be valuable, and the Patentee solicits co-operation in establishing and extending it, in this important and ever increasing branch of Cotton Maufacture of the United States.

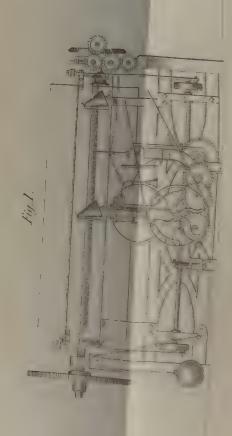
The Mule with Carriage, all complete, IN THE GREAT EXHIBITION, HYDE PARK, LONDON, is for sale. Principals only will be negociated with, by applying to the Patentee, 62 George Square, Glasgow.



PATENT CONDENSER OR ENDLESS CARDING ENGINE FOR MOOL.

A SELF ACTING FEEDER FOR ALYP SECONDORFINISHER CARDING ENGINE.



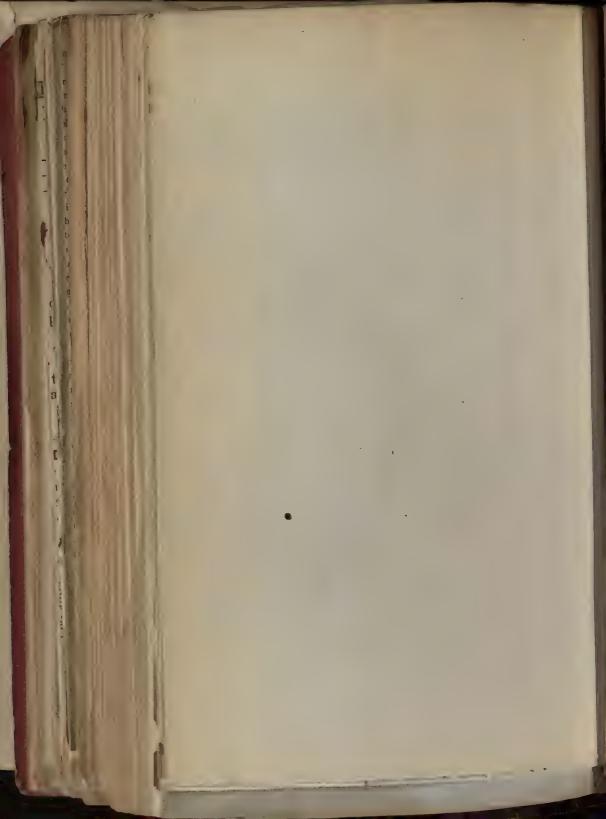


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CLOBE WORKS,

" Hirhilli

". Hambarter.



with, viz., Precion, Precion, and Stubbing,—and in the yaars being more regular and level than those produced by the ordinary method.

In many of the first attempts to obtain endless cardings, the machines being fed by hand, the slubbings were not regular. The Self-feeder has completely remedied this defect, and by its use a quantity of wool can be placed at the feeder of the second engine that will serve a day, or any smaller portion thereof.

the felting quality in milling, causes a firmer texture in the cloth, and a corresponding fulness of bottom and richness of appearance not attained by the methods formerly in use. An equal, and sometimes a greater quantity of work is turned off; the threads are more nappy, which increases

For Warps, it is only necessary to double the slivers of wool upon an intermediate engine, and draw the slubbings more in the Condenser and Mule to obtain that straightness of fibre which gives strength to the thread.

Both Machines are portable, readily applied to old engines; occupy no more room, and do not require short

time hands to work them.

plan differs from any other in the superior manner of removing the wool from the doffer-cylinder by a stripper-roller, by which means the slubbings can be produced finer, so as to spin better, with less breakage and waste, both at the engine and mule. It also enables parties to work any description of wool without being confined to some particular The Condenser is made with one, two, or three doffers, according to the quality of the work required; but each kind that will suit the machine.

The one-doffer plans are intended for the coarsest work, and do not require any of the old parts of the engine

The Condenser, or Endless Carding System, reduces the operations to two of the simplest and most economical forms, viz.,—Carding and Spinning. The failure of some methods intended to obtain a similar result, and the prejudice caused thereby against all, may be considered the causes of its not being universally adopted.

The following firms are selected from a number; some of them have had these plans at work for seven or eight

Messrs, Kelsall & Bartlemone, Rochdale

" E. Elliout & Bartlemone 
" J. & R. Tweedale 
" J. & R. J. Whitzen Rawson & Co., Halifax 
" John Chossier & Sons 
" John Name & Brothers 
" J. J. Whitzenedale 
" J. & R. J. Whitzenedale 
" J. J. Whitzenedale 
" J. & R. J. Whit Condensers.

### MACHINES OF THE DESCRIPTION

which is arranged to form a lap of sliver 16 inches diameter, and 4 or 5 inches wide. When the required length of sliver is wound on, notice is given by a bell, and if not attended to another movement doffs the lap, so as to insure through a revolving tube at the side of the frame, which imparts to it an amount of false twist. It is drawn through the tube by a pair of rollers, and returned between a lower pair to the small Lap Machine in front of the Engine, which is arranged to form a lap of sliver 16 inches diameter, and 4 or 5 inches wide. When the required length of In Figure 1, the wool is shown removed from the doffer of the first Carding Engine by a comb, as usual; passes It is drawn through each one being of the same uniform length.

A number of these narrow laps is placed side by side upon rods, so as to form four rows, seen at  $(a, b, c, d, \operatorname{Fig.} 2)$ , each row being the whole width of the Engine, and are turned off into the engine by the unlapping rollers (e, f, g, h); each sliver passes through a separate guide as it enters the feed rollers, to keep it in its proper place.

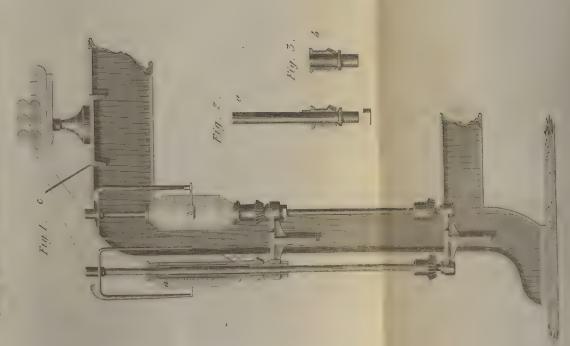
The wool having passed through the engine and been carded in the usual manner, is removed from the main cylinder in the form of endless bands or slivers, by the condenser deflers (i, k), which are provided with rings of card and alternate blank spaces, so that the wool which is left upon the cylinder by the top doffer is removed by the

The stripper rollers (l, m) take these bands of wool from the doffers, after which they pass between the doubled and less twisting straps (n, o), for the purpose of receiving a degree of false twist or condensing sufficient to enable them to carry forward to be spun.

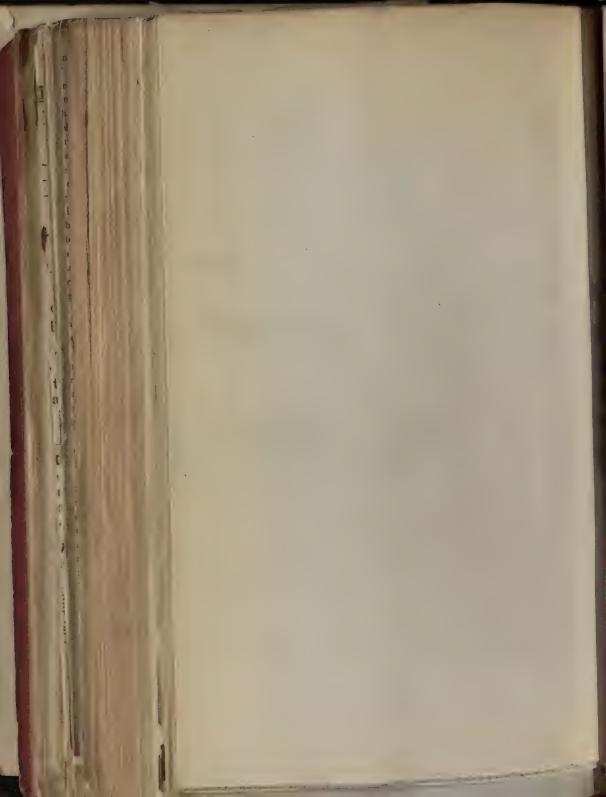
They then pass between the delivering rollers  $(p, q_i)$  to the bobbins (r, s), on which they are lapped by friction of contact with the drums (t, u). When the bobbins are filled, they are removed direct to the Mule to be spun, where they are turned off in a similar manner by drums.



FOR SOFT OR PRESSER BOBBINS,



"i Hunchester.



# PATENT SLUBBING & ROVING FRAMES.

The object of this improvement is to give a firmer support to the Spindles, and obtain a greater speed with greater steadiness. This is accomplished by making the ordinary Collar in the Lifting Rail longer, continuing it through the Pinion Wheel up the inside of the Bobbin Barrel to the top thereof, where the bearing for the Spindle is formed, as shown at (a)—Figs. 1 and 2.

Frames constructed on this principle are now running upwards of fifty per cent faster, and producing an increase of work in the same ratio. They take less power (in proportion to the speed), and are less liable to get out of repair, because the vibration of the Spindle is prevented, and that increased action which takes place upon the Collar and Spindle when the bearing is so much below.

so that the Spindle fits only at the end, and the Bobbin is also prevented rubbing upon the outside of the Collar, by In order to reduce the friction still more, the Collar is made with a recess or hollow chamber in the inside, its being made to fit at the lower end upon a Flanch, which projects from the top of the Pinion Wheel.

The top of the Flyer is left clear for piecing up and doffing; and as the Spindle works in two rails only, as usual, there is no difficulty to contend with, requiring a greater degree of truth, or causing increased friction upon

of the lift, say 10 inches in Slubbing and 7 inches in Roving Frames, in favor of this Patent, the effect of which is The difference between this mode and the best arrangement of Collar previously used is shown at Figs. 2 and 3, the bearing for the Spindle in the one being at (a), and in the other at (b),—a difference equal to the length evident in greater steadiness of the Spindles, less friction upon them, and diminished wear and tear.

These advantages are much more manifest after the Machines have been some time at work.

Although the Bobbin Barrel is about 3-16in. larger in diameter, it is not found to be a disadvantage; the Frame starts better upon the empty Bobbin, and a triffing increase in the diameter, when full, will hold the same length of Slubbing or Roving. Frames upon the old system are easily altered: the same Bobbins may be made to answer by reducing the diameter of the Spindles (making them true again), and widening the inside of the Bobbin Barrels to receive the Collars.

inside the Bobbin, used for keeping the Bobbin clean and preventing it wearing; it is, therefore, as well to add that the Collar (a) is a fixture, firmly screwed down to the Lifting Rail for steadying the Spindle at its upper end, and the N.B.-This invention has been mistaken for a loose Tube, running with the Pinion Wheel and projecting Pinion Wheel and Bobbin run loosely around it, as represented.

They are working at the following speeds with great advantage:-

Slubbing,	12-inch	lif	12-inch lift 700 Revolution	700	Revolution
Ditto,	10	5	800	800	33
Intermediate, 8		33	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	000	**
Roving, 6 & 7	2 %	33	1200 to 1400	400	33

quicker when required; but whether high or ordinary speeds be preferred, they run more steadily and produce better The Spindles and Flyers are no longer the limit to the speed of the Machine, -they may be run much

The Separating Plates (c) prevent any of the ends when broken becoming entangled with the others, and making waste.

The Bobbins are made to pass over the junction of the Spindles and Flyers, so that one inch longer lift is obtained in the same length of flyer.

description of our improved Sheebberry and Hoving Transces, and so solicit an early inspection of them at work. information, prices of new Frances, at for abbeing old I shall be glad to feeinish you with any additional I beg to call your asherseen to the annexed

I remain,

Yours respectfully.

John Manon.



# CORKING enasterman's S APPARATUS, BOTTLING

PATENT

MACHINE.

These Inventions having undergone the test of experience, are recommended to the Public with perfect confidence, as a means of Bottling Liquors, and Corking Bottles, with greater facility and dispatch than by any other method, and without waste or breakage.

The principle of the Bottling Apparatus, is, the filling of bottles through syphons, from an open vessel into which the liquor flows from the cash in a stream, so regulated, as always to maintain the inquor in the vessel at nearly the same level. Among the advantages attending the use of the Apparatus, the following may be enumerated: —Four Bottles are filled at the same time, and all advantages attending the use of the Apparatus, the bottles may be connected: when the liquor ceases to run into them without the least intervention of the moment the bottle is begun to be withdrawn from it, and re-commences the moment the full bottle is replaced by ceases running the moment the bottle is begun to be withdrawn from it, and re-commences the moment the full bottles.

The liquor runs into the bottle with so gentle a stream, as not to cause the least frothing, even in the liveliest malt liquor.

The Apparatus is very durable and of small compass—it can be packed in a case 8 inches square, by 2 feet long.

The principle of the Corking Machine is, to force the cork into the bottle, through a conical tube, in contact with its mouth, and in such a position as to form one continuous tube with its neck, and having the loner orifice so small, as that the cork must be and in such a position as to form one continuous tube with its neck, and having the loner orifice so small, as that the cork must be

considerably compressed and compacted in passing through it.

As the corks are impelled into the bottles by a lever, it must be evident (from the above principle), that all jarring against, or even pressure on, the bottles is avoided; the consequence (as experience has proved) is, that no breakage takes place, provided the

Another advantage is, that the bottles can be much tighter corked than by the common method; so much so, as to preclude the bottles be sound, and mere ordinary care be taken.

Two workmen are enabled, by the use of the Apparatus, and Machine, to bottle and cork 40 dozen in an hour with ease; and in one hour an experienced workman can cork 60 dozen. The Machine is constructed principally of iron, is portable, and can be packed in a case of I foot square, by 21 feet long. necessity of wiring them.

They may be seen in operation, daily, at MASTERMAN & Co.'s, Dolphin Brewery, Broad Street, Hatcliff, London; and are for

Numerous references can be given to Establishments of the first respectability, which have adopted the above patent inventions.

DIRECTIONS FOR USING

# THOMAS MASTERMAN'S

# PATENT BOTTLING APPARATI

After having driven the Cock into the Cask, screw on the valve tube, the lever of the valve in a position the farthest from the Cask, -(was) leather between the flanches of the Cock and the tube, will enable this Then adjust the apparatus so, that the edge of the trough may contact with the Cock, and the valve tube be in contact with the side trough nearest the Cask, and at equal distances from the ends. the float to the valve lever. It is attached, or taken off, most easily by its edge upwards. Then open the Cock, until the liquor rise in the sufficiently to cause the float to shut the valve; when it must be shut. ascertain that the float does not touch the trough in shutting and opening Then open the Cock, and put the sypl valve, and that it acts freely. action by sucking the air out of them, and hang the bottles on them success It now only remains to adjust the Apparatus so that the bottles may be all to the precise point required. For this purpose, charge three or four h which will cause the surface of the liquor in the trough to subside to the war level: and the last charged will be filled to the point to which all wall filled. If it should be found too full, elevate the iron rail which support bottles,-if not full enough, depress it. This is done by means of the screws at the ends of the iron rail. The Apparatus is then ready for operation

In hanging a bottle on a syphon, let the syphon enter its neck as far as it then depress the bottle, until its neck (underneath its rings), come in equivith the iron rail.

In withdrawing a bottle from a syphon, it is proper, at the first momin lift the bottle so that the neck may press against the lower side of the sypwhich both releases the rings of the bottle from the iron rail, and cause liquor (by the end of the syphon in the trough being thus pressed against leather on the wooden frame therein, and thereby closed), to cease running the bottle. The neck of the bottle should be continued to be pressed as the syphon during the removal of the bottle, for the purpose of keeping syphon closed, and as it is withdrawn, the bottom of the bottle should gradually elevated, in order that its mouth may be drawn more easily over cup of the syphon.

After commencing, never let a syphon be without a bottle; nor ever lets.

Apparatus, or cease working it, without turning off the Cock. After re-operate Cock, wait till the float shuts the valve, before a bottle be withdrawn.

When the Cask requires to be haunched, remove the Apparatus, seres conical tube on the Cock, and use it as a common bottling Cock.

Rub the Apparatus dry after use (it is best to unscrew the different partition by this purpose), and keep the syphons, and valve, in a dry situation. The should be oiled, and the wash leathers renewed, when requisite.

N. B. In renewing these leathers, do not stretch them upon the Framleave them quite stack, so that they may be sucked up to the end of the Syptand form close valves, when the latter are not in action.

# DIRECTIONS FOR USING

# JOHN MASTERMAN'S

# TENT CORKING MACHINE.

we the Machine close to the Bottles, having the Lever nearest to them. tourself in front of the Machine, and as far from it as you can, to be reach of the Corks. The stool should be about fifteen inches high. your right foot on the pedal with the strap over it. Take up the Bottle neck, with the right hand, and with the forefinger in its mouth. Having ascertained the size of the Nip, place the bottle, with the same hand, under mper sized Tube, holding it close up to it, and then, raising the Toe, and sing the heel of the right foot, the pedal will cause the trough to rise, and tain the Bottle firmly with its mouth against the Tube. Be particular that ad of the Tube is in the mouth of the Bottle. Then, at one and the same ent, raise the Lever with the right hand, as high as it will go (keeping it and take a proper sized cork with the left hand, from the Cork box and on the left side of the Machine) and after dipping the bottom of the Cork coup of the liquor (placed in the nearest corner of the box) put it into the with the same hand, -adjusting it so that the impeller will press exactly scentre. This done, grasp the neck of the bottle firmly with the same so as to hold it in its position while being corked, and to be ready to we the bottle, when done. Experience has proved there is no danger of Then depress the Lever and being cut, if even the bottle should break. as much impetus, as to impel the Cork into the Bottle as quickly as sible; keeping, at this moment, the heel of the right foot pressing on the ...l, and the toe pressing upwards against the strap, to prevent the trough as way by the pressure of the Cork on entering the Bottle. When the ver is depressed to its utmost, press the toe of the right foot downwards, sh will lower the trough, then raise the Lever a few inches, and depress it rtly again, by which means the Cork will be disengaged from the Tube, out breaking the edges,-whereas they are liable to be chipped, if the "les are removed without this second motion of the Lever. ked Bottle down, with the left hand, and take up an uncorked Bottle with right hand, and repeat the operation. Observe never to touch the Bottle the left hand 'till the Cork has been put into the Tube.

If on depressing the lever, much resistance should be found, it is a proof, there, that the Cork is too large for the bottle, or is of bad quality. In this

e, remove the bottle from the tube, and force the Cork through it.

Be careful never to force Corks through the tubes without previously dipping

After some use, the lower edges of the tubes may get burred, (particularly if a bottles be raised up to the tubes with the trough, instead of being held up the tubes, and the trough raised to them, as ought to be done), and consecutly not deliver the Corks freely, and be liable to chip their edges. In such sees, a few rubs inside the tube, with a fine half-round file, will remove the remaind it ought to be attended to.

The less the impellers project through the tubes, (and they are regulated by screw near them), the less mark will be made on the Cork, and the sooner

will disappear.

A bottle should never be placed under the smallest tube, unless its mouth be small to allow the end of the middle tube to be within it.

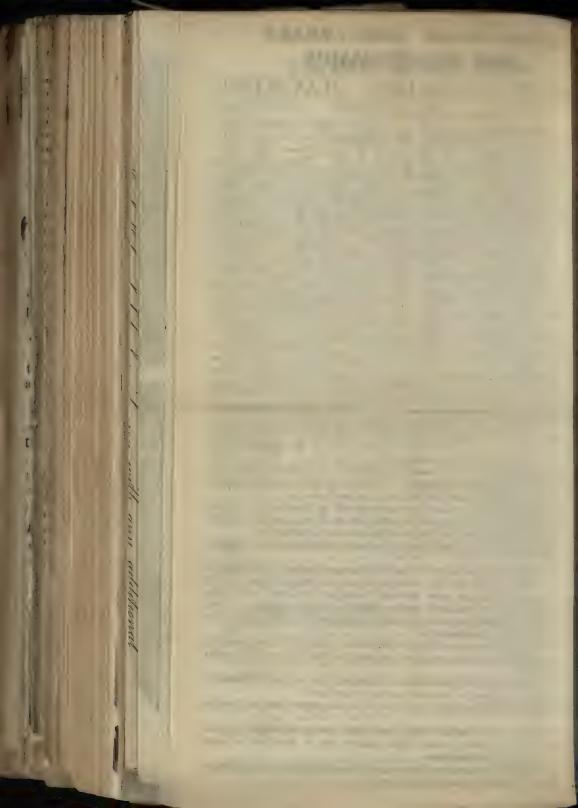
The middle tube will generally be found to be the proper one for English offices.

The necks of French bottles being very weak, the Corks should be well impressed before entering them.—The smallest tube is therefore the most roper to be used in Corking them.

The tubes should be kept dry, after use, and the sliding parts of the Machine

ept well oiled; tallow ought never to be used.

Il fallut que des boulangers de profession, éclairés par les notions scientifiques recueillies dans es mphithéâtres, animés l'un gal gant plus avec les son mant plus avec les son mant



# SUR LES PRODUITS DE L'INDUSTRIE FRANÇAISE EN 1844.

CINQUIÈME COMMISSION. - ARTS CHIMIQUES.

Membres de la Commission. -- MM. Thenard (Baron), président; D'Arcer, Benthier, Brongniart, Chevreul., COMBES, DUMAS, PAYEN, PELIGOT, POUILLET.

# MM. MOUCHOT FRERES, au Petit-Montrouge (Seine).

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Après les procédés de conservation des blés, on doit placer la fabrication du pain au premier rang des industries qui intéressent l'hygiene des peuples.

Et cependant, avant l'exposition de 1839, la confection du pain, venue jusqu'à nous par les traditions d'une antique routine, ne s'élevait pas au-dessus d'un rude métier.

En vain des ingénieurs habiles, au nombre desquels nous pourrions citer Chabrol de Volvic, Legallois et tant d'autres, essayèrent d'introduire des améliorations rationnelles dans les grossières opérations de la boulangerie; la routine et les préjugés s'y opposaient invinciblement.

sacrifices pécuniaires pour atteindre le but ut leurs efforts, se missent à l'œuvre, bien décidés à Il fallut que des boulangers de profession, éclairés par les notions scientifiques recueillies dans nos amphitheatres, animas Vinngal somenn nar la pogresa industriels. ne comptant plus avec les poursuivre leur projet en consultant eux-mêmes les résultats des expériences de chaque jour.

Toutes ces conditions, indispensables au succès d'une telle entreprise, se trouvèrent réunies chez MM. Mouchot frères, qui ont exposé cette année le modèle de leur grande boulangerie.

machine à vapeur, pétrins mécaniques à compteurs, fours aérothermes continus, distributions d'eau chaude et froide, fourneaux à double effet produisant le coke et le gaz qui éclaire l'usine et l'intérieur des fours, tubes articulés conduisant le glaz-light, thermomètre indiquant la température de l'air en circulation dans le four, régulateurs, embrayages pour emmagasiner la farine, charger les pains sur les voitures, etc. : dans touten ces dispositions, une manufacture de premier ordre se L'ensemble et les détails offrent un grand intérêt : la disposition générale, la série des appareils,

plus constant, l'enfournement facile, la cuisson plus régulière donnent des pains exempts de tous devienne indépendant des négligences, coalitions et maladies des hommes; que le levage de la pâtă les corps étrangers qui ont disparu en effet avec les dernières traces de cendres sur les soles des fours. On comprend ainsi que les farires soient conservées bien saines, que l'insalubre et bruyant travail des geindres ait été supprimé, que le pétrissage de la pâte rendu plus complet et plus propre

Si l'on ajoute que de tels résultats sont garantis soit par une pratique graduellement acquise et perfectionnée depuis sept ans, soit par la qualité supérieure des produits livrés à tous les collèges de Paris, aux pensions, à l'école Polytechnique et à la plupart des grands établissements dont les fournitures s'élèvent actuellement à six mille kilog. par jour, on admettra que cette importante industrie est définitivement organisée, qu'elle a pris son aplomb manufacturier.

ment dans les manutentions et chez MM. Mouchot frères. Une commission prise parmi les membres de l'Académie des sciences, de l'intendance, du conseil de santé des armées, du génie militaire, des administrations spéciales et du syndical des boulangers de Paris, a reconnu, d'un avis unanime, que Nous devons dire encore que l'administration de guerre, jalouse de faire participer les troupes au l'introduction de ces appareils et procédés nouveaux dans les manutentions militaires, doit réaliser bien-être que ces améliorations peuvent procurer, a fait fabriquer le pain de munition comparativeune économie notable, en améliorant le régime du soldat.

Le jury central, voulant signaler hautement l'utilité et l'importance de ces applications heureuses et récompenser les légitimes succès de MM. Mouchot frères, leur décerne la médaille d'or.

(Extrait du Kapport officiel, tome II, page 789).

Paris, aux pensions, à l'école Polytechnique et à la plupart des grands établissements dont les periecuonnee aepuis sepi ans, son par la quante superieure des produits invres a fous les conlèges de fournitures s'élèvent actuellement à six mille kilog. par jour, on admettra que cette importante industrie est définitivement organisée, qu'elle a pris son aplomb manufacturier.

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# LÉOPOLD MÜLLER, FILS,

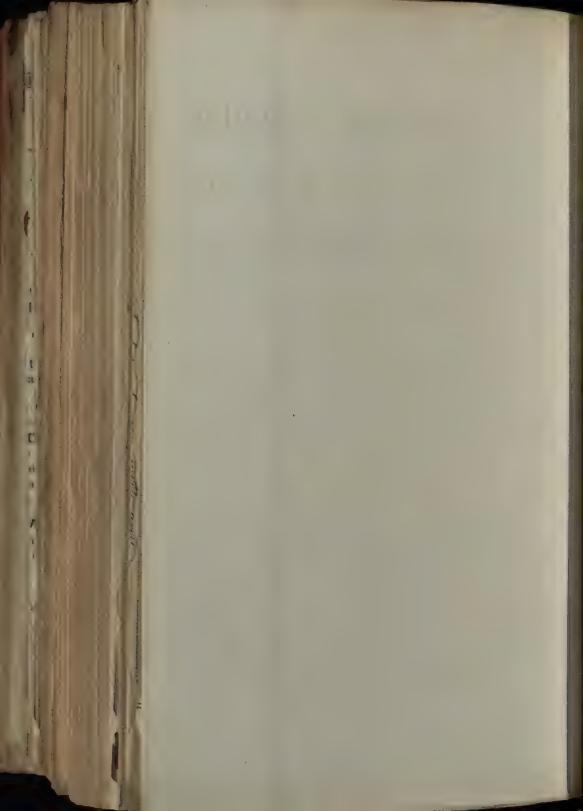
# THANN (HAUT RHIN),

# PATENTED IN THE UNITED KINGDOM OF GREAT BRITAIN.

New method of putting spindles in motion by means of cogs, without using bands or straps, or all kind of spinning apparatus, and also of stopping and again putting them in motion without stopping the spinning machine, as is the case when they are put in motion by straps.

This method presents the incontestable advantages:

- 1st. Of requiring less motive power for spinning.
- 2nd. Of producing a regular rotation of the spindles, and an uniform torsion of the yarn, which advantage does not exist in ordinary spinning machines.
- 3rd. Of lessening the wear, the friction of the spindles being a great deal less than usual.
- 4th. The suppression of the drums and of all kinds of straps.



# PECULIARITIES AND ADVANTAGES

OF

# PARKER'S PATENT MATHEMATICAL POWER LOOM.

FIRST. - The Warp can be made of any length, and wove from one or more Beams.

In Ducks, Sail Cloth, Hearns, Sacking, Bagging, and every other article where heavy Warp Yarn is used, I recommend Four Beams, which will admit of from 15 to 50 Pieces being warped in one length, thereby effecting a considerable saving in the expense of Warping, Knotting on, Thrumbs, &c.

SECOND.—The Warp is delivered or turned off by wheels, and consequently with the greatest possible accuracy and uniformity.

This mode of delivery determines the exact number of Woof or Weft Threads per Inch and preserves an equality of texture from one end of the Piece to the other, rendering the usual troublesome practice of Glassing the Cloth unnecessary.

THIRD.—Rollers covered with Woollen Cloth, or any other elastic substance, are used.

The object of covering the Rollers is to substitute the want of elasticity in Linen Yarns, so that breakage may as much as possible be avoided; it being easier to break anything over a hard than over a soft substance.

FOURTH.—The taking-up Motion is so arranged that the tension on the Warp can be adjusted to the weakest or the strongest Yarns, to the finest or the heaviest Cloth, and maintained with exact uniformity from the commencement to the termination of the Piece.

This equality of tension renders ridging of the Cloth impossible; a beautiful surface is produced throughout. The Selvage is good, owing chiefly to the Warp offering at all times the same resistance to the Weft, and by a constant and equal draw the greatest possible length of Cloth is obtained.

FIFTH.—The delivery and taking-up are effected irrespective of, or without any aid from, the Blow or Beat up.

By this arrangement the Warp is not so much strained; the Weft is carried home with the greatest ease, there being no rebound in what are termed "Rolling Shots," and the Power requisite to work the Loom is much diminished.

Sixth.—The Loom is self-acting—from the commencement of the Piece to the termination, no change or alteration of any of its parts is required.

Necessarily, the duties and anxieties of the Overlooker are greatly diminished. Cloth as perfect as can be desired is rapidly produced with very little attention on his part, as compared with the Looms generally in use. Every Piece of Cloth made of the same Yarns, and woven with the same Clange Pinion, must of necessity possess an exact uniformity, while the number of Pieks per Inch can with the greatest ease be altered (by a Change Pinion) so as to increase or reduce the cost of the Cloth, even to a fractional part,

Lady Bank Machine Works, Dundee.

Charles Garker & Sing

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# ROBERT PLUMMER'S

(Of Newcastle-upon-Tyne)

# ATENT FLAX-BREAKING, SCUTCHING,

AND

# HECKLING MACHINERY.

# Flax Straw-breaking Machine.

rollers in this machine are five, placed in two vertical series one before the the front one of two rollers, and the back one of three. The flax straw is fed Lichine between the top and middle rollers of the back series, and is . hwnwards by the back plate so as to pass between the middle and bottom If the same series, and it then passes through the two rollers of the front the reverse may be done, if preferred. The rollers are all driven, and the them have plain parts truly turned which bear upon each other, so that the one roller work into the spaces of the next adjoining roller and leave a the flax-straw to pass through, by which means the flax-straw is more and less damaged) by fewer rollers and in less time than by any other the rollers are weighted, and the pressure can be regulated as required. advantages obtained by this machine are that by having the rollers supthe ends so that the flutes on one roller do not touch those on another the better cracked and broken and less damaged than when the flutes touch; intage is considerably increased by each roller being separately driven, f one roller driving another by friction. The turn given by the back plate much to the crushing of the straw. The expense of breaking by this is calculated at one penny per hundredweight of flax-straw.

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# Rotary Disc Scutching Mill.

The novelties in this machine are, the application of whalebone, wire, be or other BRUSHES instead of the ordinary wood blades, and of DISCS inste the radial arms; also an improved form and position of the scutching board. SUPERIORITY of EXECUTION lies in the fibre being much better and quickly cleaned, and in its being made much finer (nearly heckled in fact), the or offal being also much cleaner, and of more value. INCREASED EFFICI and ECONOMY are obtained by the disc enabling more brushes (or blades) put on the machine than can be put on the radial arms; by the discs being be set with brushes (or blades) on both sides, (so as to get both a right hand as hand stand,) double work is done in small space and very nearly for the same p by the discs keeping the fibre steadily on the scutching board, and not land round, and cutting and tearing it away at the ends as is done by the strong and blows of the the radial arms; by the superior manner in which the brush perthe straw, and splits and cleans the fibres from gum, as compared with blades by the form and position of the scutching board making the stroke fall on the more perpendicularly so as to produce a longer stroke.

A machine of two discs will scutch five hundredweight of straw per discs four hands.

# Cylinder and Sheet Heckling Machines.

THE NOVELTY is in the application of BRUSHES to dressing in a decemachine; in the oscillatory motion; and in the tow-delivering revolving green SUPERIORITY of the EXECUTION lies in having the fibre thoroughly and dressed at both sides at once and close up to the nip of the holder by the impresentation of a double machine; in the oscillatory motion relieving the entering flax from being too much dressed away, especially when one machine is used from the tow; and in a new application for traversing the holders. THE INCE. IN EFFICIENCY AND ECONOMY in the above are in the quantity and qualified work done; in the superior cleanness of the tow; and in the small number of the employed. The tendency of this machine is to cheapen linen articles, as it probetter work at a cheaper rate.

The PECULIARITY and SIMPLICITY of the OSCILLATORY Mollowhich in the Cylinder machine can only be applied to one cylinder) is of very value in upright sheet machines for long flax, as from its being attached that moved by the lifting bars of the trough it opens and closes the sheets as the

and falls, thereby giving most dressing where the streak of flax is thickest, or the holder, and only lightly touching the thinnest parts or ends of the flax, improves the yield.

The GENERAL IMPROVEMENT and NOVELTY of applying whalebone and RRUSHES to lay the tangled flax fibres straight before they come in contact the rigid heckle pins, which can be adopted in nearly every existing construction acking machines with increased effect in dressing the flax, improving the yield, area, and cleanness, and in producing cleaner tow, PATENTED by ROBERT EXEMPLE, is illustrated in the Cylinder machine now exhibited.

A pair of PLUMMER'S PATENT DOUBLE CYLINDER MACHINES will, for hands, dress six hundredweight of twice cut flax in a day; a pair of MMER'S PATENT DOUBLE SHEET OSCILLATORY MACHINES will, with fix hands, dress thirteen hundredweight of long flax per day.

The patentee has made arrangements with the well known firm of Messrs, Peter himself and Co. Leeds, to manufacture all these machines.

### Patent Flax Holders.

The advantages of these holders consist in their being made chiefly of GUTTA RCHA, which from its slight elasticity holds the flax with a firmer grip than any armaterial hitherto used, being also very durable, and into liable to breakage, and material of the old holders being valuable and capable of being remoulded; and the flates and corresponding beads which are made in the inner surface helping to the flax more firmly. There are various forms of these holders, adapted to aspend other heckling machines, and which may be made in wood, iron, courtal PERCHA.

The Gutta Percha holders now exhibited are made by, and bear the stamp of, \*GUTTA PERCHA COMPANY, with whom the patentee has made an arrangement the manufacture of these articles in their various forms.

Kewcastle-upon-Tyno: Printed at the Journal Office, Groy Street, by John Hernaman.

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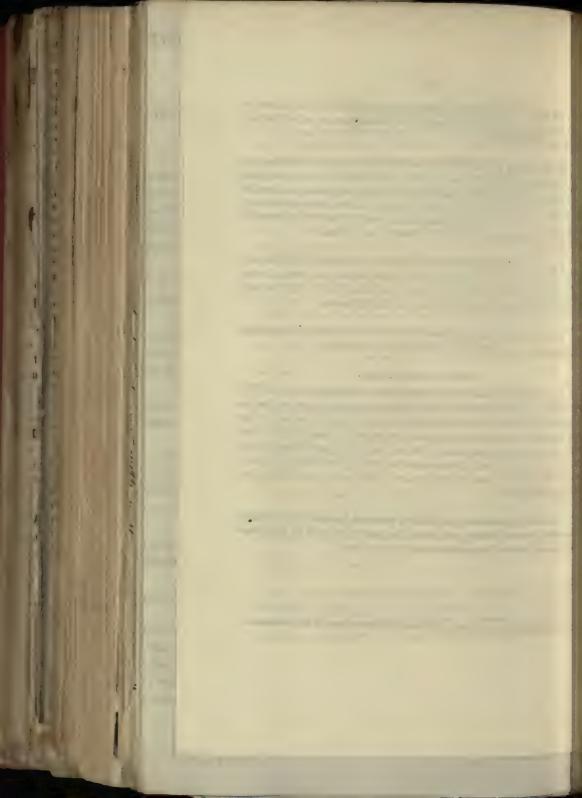
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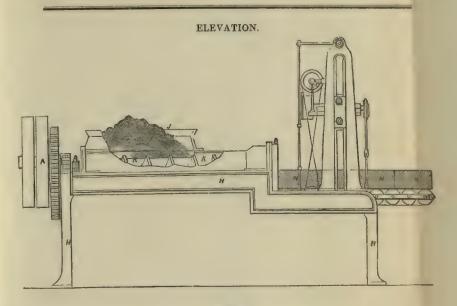
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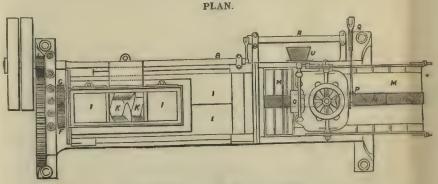
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# RANDELL & SAUNDERS' BRICK, TILE, AND PIPE MACHINE.





## DESCRIPTION OF THE MACHINE.

a is a driving pulley on the shaft b; c is a pinion on the same shaft which drives the wheel d upon the screw-shaft e; f is a pinion on the screw-shaft e which drives a pinion on the other screw-shaft g; h is the framing; i is a cylinder in which the screws revolve, closely fitting them; j is a hopper in which the clay is put; h k are the screws; i is a die fixed to the mouth of the screw-box i, with a hole the shape of the required section of the brick through which the clay research was a subscript at the clay research. which the clay passes; m m are rollers supporting the cloth which carries the bricks as they leave the die; n n are which the clay passes; m m are rollers supporting the cloth which carries the bricks; the spring is wound up by means bricks; o is a cast-iron box in which is a spring for the purpose of cutting off the bricks; the spring is wound up by means bricks; o is a cast-iron box in which is acted upon by the lever q, upon the shaft r, which is made to vibrate by the of a catch and ratchet wheel p, which is acted upon by a corresponding pulley on the spindle of the roller m (which is crank t, upon the shaft b; u is a cone-pulley, driven by a corresponding pulley on the spindle of the roller m (which is crank t). The bricks passing over it), for the purpose of lifting the hammer r, which, passing over the centre, made to revolve by the bricks passing over it), for the purpose of lifting the hammer r, which, passing over the centre, and the bricks passing over the centre of the purpose of lifting the hammer r, which is a spingle of the roller r and r are the cut by means of a wire fixed in a falls and strikes a trigger, which liberates the spring-box o, which then makes the cut by means of a wire fixed in a falls and strikes a trigger, which liberates the spring-box o, which then makes the cut by means of a wire fixed in a falls and strikes a trigger, which liberates the spring-box o, which then makes the cut by means of a wire fixed in a fall r and r are the contraction of the properties of the roller r and r are the cut r and r ar PURN OVER.

In this Machine are combined the two objects so long sought in Brick Machines—a prowhich forces the clay through a die without cessation as long as it is supplied to the machine and a perpetual self-acting cutter, which severs the clay without interfering with its programme.

The clay, in a rough state, is thrown upon the screws by the person employed to fill the machine; the screws, in revolving, pug the clay, and also force it forwards into a chamber at the other end of the cylinder in which they revolve; from this chamber the clay is allowed as issue through a die, and it is obvious that the stream of clay must take the form of the opining through which it passes, and this opening can be made of the form required to make common bricks, bricks of other shapes (solid or hollow), tiles, pipes, and other descriptions aware. The stream of clay is carried out on a series of rollers, which are caused to revoke by the motion of the clay—this motion is employed in raising a hammer, which, in falling releases a small cylinder (marked o on the plan) in which is confined a coiled spring—this spring causes the cylinder to fly round as soon as it is released, and, in doing so, it suddenty raises or lowers a small frame, to which a wire is attached, which, passing through the clay severs it at the point required. The spring, which acts upon the cutter, is wound up by the action of the machine, and waits until released by the falling of the hammer, when it is again re-wound as before. By shifting a cord on two small conical wheels, the length of the bricks or pipes, can be varied from three inches to three feet.

When it is necessary to give the ends of the bricks a corrugated shape, this can be dote by attaching a knife to the cylinder o; this knife revolves with the cylinder, and is made of the shape required for the ends of the bricks, which form it imparts to the bricks in cutting them. This arrangement is adapted for making Messrs. Randell & Saunders' Patent Draining Bricks, for sewage purposes, which make a drain of much greater strength that the stone ware pipes, and at far less cost.

It will be seen, from the above description, that the machine is entirely self-acting—teattendants have merely to put in the clay, and remove the bricks, or other ware, which may be produced.

When worked with two-horse power, the machine will produce one thousand bricks, eighteen handred two-inch pipes, per hour; more power can be applied if desirable, and larger result obtained

When it is necessary to pass the clay through rollers, for the purpose of crushing it, the rollers can be placed over the hopper of the machine, and deliver into it.

The machine presses the clay without taking air in with it; and thus the ware comes of free from pubbles which are so often seen in the ware produced by piston presses.

The moderate price of this machine, and the simplicity of its construction, place it with the reach of almost every person in the trade, both as to cost and management. It not onlessens the amount of labour required in the process of brick making, but, as the clay can used in a much drier state than it can be when moulded by the hand, the time occupied drying is much less; and, when hollow bricks are made, a material saving is effected in to cost of burning. In consequence of the great compression given to the clay in its transfer ware of very superior quality is produced.

The n achine can be seen in operation at the Exhibition, in Class VI., No. 324, and Messrs RANDELL & SAUNDERS will have much pleasure in supplying any further information which may be required, on application to their address, 14, Orange Grove, Batterian and Company of the Co

# BATH CONTRIBUTIONS TO THE GREAT EXHIBITION.

[The following is an Extract from an Article, under the above head, in "Keenes' Bath Journal" of March 29, 1851.]

"During the past week, we have witnessed, with proud satisfaction, many of the contributions intended to be sent to the Great Exhibition from this city, in addition to those noticed in the last Journal. They are such as will, we are sure, secure for those who have invented, designed, and constructed them, very high credit, even when associated with the rich display of scientific and artistical productions, by which we may expect to find them surrounded in the World's Great Bazaar. We are equally satisfied that they do honor to Bath, and will tend fally to confirm in the minds of strangers the celebrity or city has so long enjoyed in connection with everything that appetrains to comfort, elegance, and taste.

The collection of articles which claims our primary notice, as being the most important in their ultimate results, are those intended to be exhibited by Messrs. Randell and Saunders, of the Orange Grove, and which comprise several novel, ingenious, and useful machines, of which those gentlemen are the inventors and patentees. The first machine we may allude to we saw in full work at Messrs. Stothert's foundry, on Wednesday evening, when it was being tested prior to being dispatched to Hyde Park; and we were delighted with is simplicity and astonished at its capabilities for the end designed. lis abrick machine with double screw press and perpetual cutter, simpled for making Randell and Saundera's patent draining bricks, gapter for making related and counters parent draining cricks, for swerage purposes, which give a drain of greater strength than the common pipe or brick sewers, at a less cost. The machine is also applied to the manufacture of building bricks, and all descriptions of tile and pipe ware. The clay fails on two screws working the same the same the counter by the strength of the counter by the same time driver. loss of the and pipe ware. The day lans on two screws working into one another, by which it is pugged and at the same time driven out through a die at the further end of the cylinder, receiving in its transit great compression, so that the bricks are delivered through the die in a very firm and solid state. On leaving the die, the bricks pass under a perpetual cutter which works without checking the progress of the clay, severing the bricks or tiles at any required lengths, giving the ware joints either square, angular, circular, or any segment of a circle, plain joints or tongues and grooves, - in fact, giving the ends of the bricks or tiles the form required. Two men and one kd, with the machine working at little over one-horse power, produce 1,000 bricks per hour. On enquiry we were told that the Pace paid for moulding bricks per manual labour is from 4s. to 5s. per thousand, and the comparative, statement of costs would be as follows :-

To work	the machine ten hours, Two men, say One lad Two horses	e. 6 1 8	d (
	Total cost per 10,000 bricks	15	6

10,000 moulded by hand at 4s., £2, giving a saving of £1 6s. per day, to that the machine if in full work 10 hours daily would pay its cost in about forty days.—On the following morning we were gratified with a view of the other articles which Messrs. Randell and Saunders purpose exhibiting, including a model of their sawing machine, which they have in operation at their quarries, Corsham, for cutting stone from its natural rook. The model will be shown in operation in a stone model representing one of the beadings in Corsham Down Quarry; it works eight saws, which in the original machine are 24 feet long. By a simple arrangement each saw is allowed an action quite independent of the others, and can be worked at any angle which may be required. In case of any impediment it is arranged for either saw to stop before it is strained, and without interfering with the action of the others. This machine does the work of seventy versing crane, worked by the same ropes which work the saw frame, and both are driven by steam power.—The same gentlemen will also each bits a model of their balanced saw frame, which is constructed on a new principle for sawing blocks of stone, marble, &c., either by a model of a portable balanced hand saw frame, which is a very instant of the property of the power; and with this machine will be shewn a model of a portable balanced hand saw frame, which is a very unseful and power for cutting stone or marble. This must be a very useful asserted and power for cutting stone or marble. This must be a very useful asserted gentlemen in the building trade who have seen it."

For further information, and for price of Machines, address

MESSRS. RANDELL AND SAUNDERS, STONE MERCHANT'S,

BATH.

Tachine are combin the clay through a ual self-acting cutte

in a rough state, in escrews, in revolvid of the cylinder in hadie, and it is obtained which it passes, an eks, bricks of other stream of clay is connected on of the clay—this mall cylinder (mark est he cylinder to fly wers a small frame, the point required. e machine, and waits before. By shifting an be varied from the

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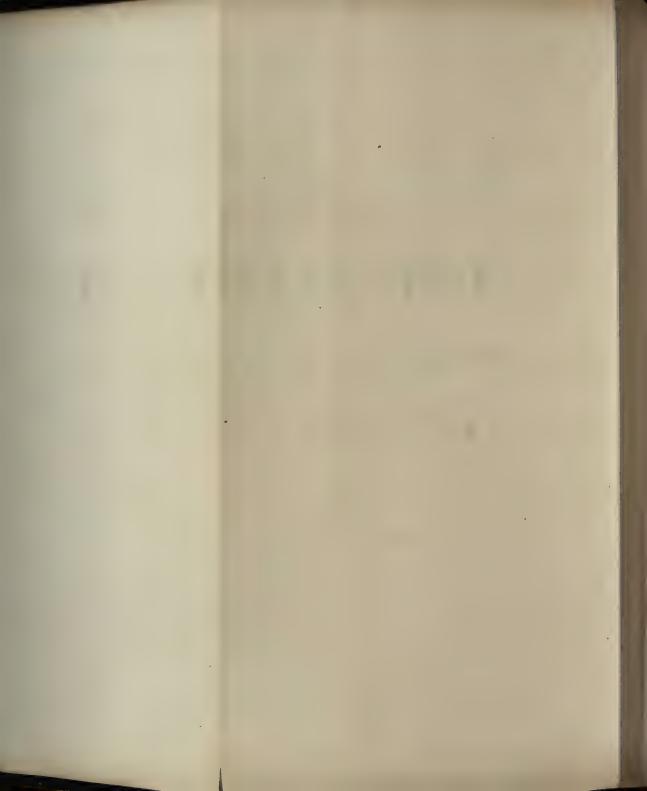
oderate price of this manifold almost every person in amount of labour requirement drier state than it much less; and, when himming. In consequent ry superior quality is print almost and the state of the state of

achine can be seen in o ANDELL & SAUNI n which may be required

# L'ÉPURATEUR

PRÉPARATION ÉCONOMIQUE DU COTON POUR FILATURE

PAR M. G.-A. RISLER, DE CERNAY



# EXPOSITION UNIVERSELLE DE LONDRES.

# L'ÉPURATEUR

PRÉPARATION ÉCONOMIQUE DU COTON POUR FILATURE

PAR M. G.-A. RISLER, DE CERNAY

BREVETÉ EN ANGLETERRE, EN FRANCE ET DANS TOUS LES PAYS INDUSTRIELS

# S'ADRESSER POUR DEMANDES ET RENSEIGNEMENTS:

A MM. CH. COWPER, ingénieur civil, 20 Southampton-Buildings.

RISLER HEILMAN, passage Saulnier, à Paris.

A. ROECHLIN ET Co, à Mulhouse, Haut-Rhin (France).

M. RISLER FILS, à Cernay, Haut-Rhin (France).

MIROUDE, fabricant de rubans à pointes pour cylindres alimentaires, à Rouen.

R. KEPRO MARCHI E SPINN, fabricants à Inspruck, Autriche (Tyrol).

# **PARIS**

IMPRIMERIE DE J. CLAYE ET C.
RUE SAINT-BENOÎT, 7

# ECONOMICAL "ÉPURATEUR"

Or Cleaner of cotton for spinning, invented by

Mr. G. A. RISLER.

Patentee in England, France and all manufacturing countries.

It is well known that it has been a constant search and trial to lessen the evil effects of the work of the beaters. The scotchers, which are lined with iron sheets and turn with great celerity, submit the cotton to an agitation too rough, and make it have joltings much too violent, which, quickly repeated, weaken and entangle the filaments of this cotton, before it is cleared entirely of all the foreign matters it contains.

Thus entangled, the filaments of cotton, nearly always require two cardings to set it up with a transparent look and completely freed from knots and other filth which the beaters have not removed. But this double carding, though useful, creates too much expense, for keeping in repair, and occasions much waste by the unstopping often repeated of the great drum and of the caps (chapeaux), and is besides an operation prejudicial to the health of the workmen.

As a remedy to this difficulty and in order to do away advantageously with wholesale carding, it was necessary to combine an apparatus fit to open and to reach regularly all these filaments of cotton, so as throughly to clean them and parallelise them, in the shortest time, with the least trouble, and the greatest economy of waste and expense, at the same time preserving their natural qualities.

Mr. G. A. Risler has solved this problem by the invention of the machine called "Epurateur", which replace with advantage the beaters and allows of the partial or total suppression of the

# ÉPURATEUR.

Préparation économique du coton pour filature.

PAR M. G. A. RISLER,

Breveté en Angleterre, en France et dans tous les pays industriels.

Il est généralement reconnu qu'on a constamment cherché à atténuer les mauvais effets du travail des batteurs. Les volants qui sont garnis de lames de fer et qui tournent avec une grande vitesse font subir au coton une agitation trop brusque, et lui font éprouver des chocs trop violents qui, vivement répétés, énervent et enmêlent les filaments de ce coton, avant qu'il soit entièrement débarrassé de toutes les matières hétérogènes qu'il contient.

Ainsi enmêlés, les filaments du coton ont presque généralement besoin de deux cardages pour être redressés, d'un aspect transparent et complétement débarrassés des boutons et des autres ordures que les batteurs ne leur ont pas enlevés. Mais ce double cardage, quoique utile, occasionne trop de dépenses, trop de frais d'entretien, et donne beaucoup de déchets par le débourrage souvent répété du grand tambour et des chapeaux, et en outre une opération préjudiciable à la santé des ouvriers,

Il s'agissait donc, pour remédier à cet inconvénient et pouvoir supprimer avec avantage le cardage en gros, de combiner un appareil qui fût propre à ouvrir, à atteindre régulièrement tous les filaments du coton pour bien les nettoyer et les paralléliser dans le moins de temps, avec le moins d'effort possibles, et avec économie de déchet et de frais, tout en leur conservant leurs qualités naturelles.

M. G. A. Risler a résolu ce problème par l'invention de la machine, dite Épurateur, qui remplace avec avantage les batteurs et permet la suppression partielle ou totale des cardes, suivant

# Epurateur,

eine neue Maschine zur ökonomischen Vorbereitung ber Baumwolle für Spinnereien,

bon herrn G. A. RISLER.

Patentirt in England, Frankreich und allen inbuftriellen Länbern.

Man hat bekanntlich bis jest immer gesucht die schlechenm Birkungen der Schlagmaschinen zu verringern. Die Trommeln, die mit eisernen Flügeln versehen sind, und sich mit großer Geschwindigkeit drehen, geben der Baumewolle eine zu heftige Erschütterung, und segen sie zu heseigen Stößen aus, welche, indem sie ost wiederholt wereben, die Fasern derselben schwächen und verwickeln, ehe die fremden Körper aus derselben fortgeschafft sind.

Die Fasern der Baumwolle, auf diese Weise verwickelt, haben gewöhnlich ein doppeltes Kragen nöthig, um die Samenkörner und andere Unreinlichkeiten, welche die Schläger nicht abgenommen haben, zu entsernen. Dieses, obgleich nügliche, doppelte Kragen hat jedoch den Nachteil, zu große Kosten zu verursachen, gibt vielen Abfall durch das oft wiederholte Bugen der großen Trommel und der Deckel, und ist der Gesundheit der Arbeiter sehr schällich.

Es handelte sich baher, um biesem Uebel abzuhelsen und das Vorkrazen weglassen zu können, einen Apparat zu ersinden, der geeignet sei alle Fasern der Baumwolle zu össnen und gleichmäßig zu erreichen, um sie in möglichst kurzer Zeit mit weniger Mühe und mit Ökonomie des Absalls und der Unkosten zu vereinigen und auszugleischen, ohne daß sie ihre natürlichen Eigenschaften verslieren

herr G. A. Risler hat vieses Broblem vurch die Ersündung der Maschine, Épurateur genannt, gelös't, welche die Schläger vortheilhast ersett und die theilweise oder gänzliche Abschaffung des Krapens, je nachdem eine mehr oder weniger große Reinlichkeit der Fäden verlangt wird, gestattet. — Bevor die Baumwolle auf die besagte Maschine gebracht wird, geht sie durch eine patentirte Wattenmaschine, Épurateur étaleur genannt, um in dersselben ausgebrettet und zu Rollen gebildet zu werden, die

### EPURADOR ECONOMICO

Del algodon para la hilanderia, inventado

por el Sr. G.-A. RISLER,

Privilegiado en Inglaterra, en Francia y en todos los países industriosos.

Es generalmente reconocido que se ha tratado constantemente buscar medio de menosear los malos efectos del trabajo de los apaleadores ó trilladores. Los volantes que se hallan guarnecidos de hojas de hierro y que voltean con grande velocidad, hacen sufrir al algodon una agitacion demasiado precipitada y le hacen experimentar choques muy violentos que vivamente repetidos debilitan y enredan los hilos de este algodon antes que esté enteramente libre de todas materias eterogeneas.

Asi mezclados los hilos del algodon necesitan generalmente dos manos de carda para verse enderezados de un aspecto transparente y completamente libres de los nudos y otras inmundicias trilladores no les han quitado. Mas esta doble mano de carda, aunque util ocasiona muchos gastos y costas para la conservacion y por los muchos menoscabos en el acepillo y repetido á menudo en el gran tambor y los sombreros ó capas, y ademas es una operacion perjudicial á la salud de los obreros.

Se trataba pues para remediar este inconveniente y para poder suprimir con ventaja la mano de carda en grueso, combinar un aparato que fuese apto para abrir y alcanzar regularmente todos estos hilos del algodon para limpiarlos bien y paralelizarlos en menos tiempo, con menos esfuerzos y con economia de menoscabo y de gastos, aunque conservandole sus calidades naturales.

El Sr. G.-A. Risler ha resuelto este problema por medio de la invencion de la máquina llamada « Epurador », que reemplaza con ventaja los tricarders, according to the greater or less clearness required from the thread.

Before the introduction to the said machine, the cotton is first passed through the beater or through a machine called "Épurateur-Étaleur" or Spreading-Cleaner (patented), to be there spread by weights and formed into rolls superior to those of the beaters, by the filaments of the cotton dressed in sheets placed one above the other.

Several of these rolls are then placed on the supports of the alimentations of the Epurateur or Cleaner, and the cotton goes through this machine coming out in quite a clean sheet and throughly carded, the quality of which has been appreciated by all the foreign and french spinners who have seen the Apparatus at work and which several have adopted. This operation gives no other waste than sand, knots and leaves which should come from the cotton. The use of the Cleaner or Epurateur can then but be advantageous on all points.

The Épurateur produces with ease from 100 to 120 kilog. of prepared cotton each day of 12 hours labour; it only takes up one fourth horse power; one work-woman alone can superintend two or three machines. The caps (chapeaux) are quite done away with, and the great drum is only unstopped once or twice a day at most, even after the purifying of cotton the most filled with dirt.

We spin N° 40 (warp) and 30 (woof) with the preparation from the Épurateur and one carding only; the quality of the thread is very good, and we thus economise the expense of a second carding, with economy of waste of 5 to 5 1/2 p. cent.

To spin coarse numbers to 10 and 20, we have quite done away with carding, by taking the sheet from the Épurateur or Cleaner directly on the stretchers; we obtain a thread of good quality, and from this mode of operating, naturally results important economy that every spinner will appreciate.

le plus ou le moins de netteté que l'on exige du fil.

Avant d'être livré à la susdite machine, le coton est d'abord passé au batteur ou dans une machine dite Épurateur étaleur (brevetée) pour y être étalé par pesées et formé en rouleaux supérieurs à ceux des batteurs, par les filaments de coton alignés en nappes superposées les unes au-dessous des autres.

Plusieurs de ces rouleaux sont ensuite posés sur les supports des alimentations de l'Épurateur, et le coton est livré à cette machine pour en sortir en une nappe bien propre et bien cardée dont la qualité a été appréciée par tous les filateurs étrangers et Français qui ont vu fonctionner l'appareil, et que plusieurs ont adopté. Cette opération n'occasionne d'autre déchet que du sable, des boutons et des feuilles qui doivent sortir du coton. L'emploi de l'Épurateur n'est donc qu'avantageux sous tous les rapports.

L'Épurateur produit aisément 100 à 120 kilog. de coton préparé par jour de 12 heures de travail; il n'absorbe que 1/4 de cheval de force; une seule ouvrière peut soigner 2 à 5 machines. Les chapeaux sont complétement supprimés et le grand tambour n'est débourré qu'une ou deux fois par jour au plus, même après avoir épuré les cotons les plus chargés d'ordures.

Nous filons des n° 40, (Chaîne) et 30 (Trame) avec de la préparation de l'Épurateur et un seul cardage; la qualité du fil est très-bonne, et par là nous économisons les frais d'un second cardage, avec économie de déchet de 5, à 5 1/2 p. 0/0.

Pour filer de gros numéros jusqu'à 10 et 20, nous avons entièrement supprimé le cardage, en portant la nappe de l'Épurateur directement aux étirages : nous obtenons un fil de bonne qualité, et de cette manière d'opérer, il résulte naturellement d'importantes économies que tout filateur saura apprécier.

bei weitem beffer als bie ber Schläger, wegen ber gleich- | lladores & apaleadores y permite la supresion mäßigen Uebereinandersetzung ber Fasern ber Baumwolle find. - Mehrere biefer Rollen werben alsbann auf bas Einlaßgestell des Épurateur's gelegt, und die Baumwolle wird in die Maschine gebracht, aus der fie als eine reine und gut gefratte Watte herauskömmt, beren Qualität von allen fremden und einheimischen Spinnern bie ben Apparat arbeiten gefehen haben, gefchätt worden ift, und mehrere berfelben haben ibn angefchafft. Diefe Operation aibt keinen andern Abfall als Sand, Samenkörner und Blätter. Die Anwendung des Epurateur's ift, wie man fieht, in jeder Beziehung vortheilhaft.

Er kann täglich in zwölf Arbeitöftunden 100 bis 120 Kilogramme Baumwolle liefern, und hat hierzu nur 174 Pferdefraft nothig; ein Arbeiterin beforgt zwei bis brei Maschinen. Die Maschine hat keine Deckel, und man braucht die große Trommel, felbst wenn man die un= reinfte Baumwolle verarbeitet hat, nur ein= ober zweimal täglich zu pugen.

Man hat Num. 40 (Kette) und Num. 30 (Einschuß) mit bem Epurateur vorbereitet und nur einmal gefragt, gesponnen; bas gewonnene Garn war von besonderer Gute, und man hat die Roften eines zweiten Rragens mit einer Öfonomie von 5 bis 5 1/2 Procent Abfall erfpart.

Um grobe Nummern bis 10 und 20 gu fpinnen, schafft man bas Rraten gang ab, indem man bie Watte aus bem Épurateur direft in die Streckmaschine bringt; man er= langt auf biefe Beife ein gutes Garn und eine bebeu= tende Dtonomie, die jeder Fabrifant leicht ichagen fann.

Die frangöfischen Fabrikanten hatten ganglich aufgehört die westindische Baumwollarten, namentlich Bengal= und Suratebaumwolle zu verarbeiten, weil man, ba fie febr unrein ift, fie lange mit ben Schlägern verarbeiten muß, und auf biefe Beife viel Baumwolle mit bem Ab= falle verloren geht. Mit bem Epurateur vereinigt man vollkommen biefe Baumwollarten, und bie erzeugten Batten können ohne weiteres Kragen zu ben groben Nummern besponnen werben. - Bur Berarbeitung ber in den Handel gebrachten Watten ift ber Épurateur un= umgänglich nöthig geworben; ber Fabrifant hat in einer einzigen Maschine die Operationen des Bugens, Kragens und Aufbreitens ber Blätter vereinigt; und biefe Ma=

parcial ó total de las cardas, segun la mayor ó menor limpieza que se exija en el hilo.

Antes de estar puesto en la dicha máquina, el algodon se pone primero en el trillador ó en una máquina llamada « Epurador extendedor » (privilegiada), para ser allí extendido por pesadas y formado en rollos superiores á los de los trilladores por los hilos de algodon que tienen alineados en forma de trenzas sobrepuestas unas en cima de otras.

Varios de estos rollos estan en seguida puestos sobre los sustentaculos de las alimentaciones del epurador: este algodon se pone encima de esta máquina para salir de ella á manera de una trenza bien limpia y bien cargada cuya calidad ha sido apreciada por todos los hilanderos extrangeros y franceses que han visto funcionar el Aparato y que muchos le han adoptado. Esta operacion no causa otro menoscabo, sino arena, nudos y hojas que deben salir del algodon : el empleo del Epurador no deja pues de ser ventajoso bajo todos los aspectos.

El Epurador produce facilmente 100 á 120 kilogramos de algodon preparado por dia de 12 horas de trabajo y no necesita mas que una cuarta parte de la fuerza de un caballo; una sola obrera puede cuidar de dos ó tres máquinas. Los sombreros (chapeaux) se suprimen completamente y el grande tambor no se limpia mas que una ó dos veces por dia á lo mas, aun despues de haber limpiado los algodones mas cargados de inmundicias.

Nosotros hilamos de los nos 40 (pié) y 30 (trama) con la preparacion del Epurador y una sola carda. La cualidad del hilo es muy buena, y así economizamos los gastos de una segunda mano de carda con economia de menoscabo de 5 á 5 1/2 por ciento.

Para hilar Numeros mas gruesos hasta 10 y 20 hemos suprimido enteramente la mano de carda, poniendo la trenzo directamente del Epurador á

In France, spinners have, so to speak, given up the use of Indian cottons, such as: Surate, Bengale, etc., because being very full of dross they require being beaten for a long time by the fliers or scotchers of the beaters, and thence much loss of cotton through waste.

The Epurateur on the contrary works and perfectly clears these cottons and separates the waste from the good cotton. — The sheets of this preparation can be spun without additionnal carding from the coarse members.

For the manufacture of wadding the Epurateur has become indispensable, the manufacturer finds the operations of packing, carding, etc., and of making into leaves or sheets united in one same machine which affords from one to two hundred kilogr. of prepared cotton a day.

The worste waste of cotton are there cleaned and transformed into one continued sheet, which can be doubled at pleasure until the required thickness has been attained.

The advantages and notable economy of this new process, over that now in use to prepare wadding, are warranted and proved by an experience of several years, by the caution of new establishments and by the successive and numerous orders of "Épurateurs".

En France, les filateurs ont pour ainsi dire renoncé à employer les cotons des Indes, tels que : Surates, Bengales, etc., parce que étant très chargés d'ordures, ils ont besoin d'être longtemps battus par les volants des batteurs, et par là beaucoup de perte de coton avec le déchet.

L'Épurateur par contre travaille et nettoie parfaitement ces cotons, et sépare bien les ordures du bon coton. Les nappes de cette préparation peuvent se filer sans autre cardage pour les gros numéros.

Pour la fabrication des ouates, l'Épurateur est devenu tout à fait indispensable, le fabricant trouve les opérations de l'épluchage, du cardage et de la mise en feuilles ou en nappes, réunies dans une seule machine qui fournit 100 à 200 kil. de coton préparé par jour.

Les plus mauvais déchets de coton y sont bien nettoyés et transformés en nappe continue, que l'on double à volonté jusqu'à ce que l'on ait atteint l'épaisseur voulue.

Les avantages et économies notables de ce nouveau procédé, sur celui en usage pour préparer les ouates, sont garantis et prouvés par une expérience de plusieurs années, par la création de nouveaux établissements et par les commandes successives d'*Epurateurs*.

Nous donnons ci-après le Rapport adressé à la Société industrielle de Mulhouse, au sujet de cette ingénieuse machine.

schiene liesert täglich 100 bis 200 Kilogramme Baumwolle.

Die gröhften Baumwollabfälle werben fehr gut gereinigt, und in Blätter, verwandelt die man so lange bis sie die gehörige Dicke erlangt haben, verdoppelt.

Die Vortheile und bedeutende Ökonomie dieses neuen Berfahrens in Vergleich mit dem bis jest gebräuchlichen, um die Watten vorzubereiten, sind garantirt, und durch eine mehrjährige Erfahrung, so wie durch die Gründung neuer Etablissement's und die zahlreichen auf einander solgenden Bestellungen von Épurateur's erwiesen (1).

(1) Ueberreicht burch bie babifche Woll- und Baumwolltragenfabrif in Freiburg im Breisgau, welche bis jest allein bie nöthigen Krasen für ben Épurateur fabricirs hat, und zu beren Lieferung sich biefelbe bestens empsielt. las estiras, y obtenemos un hilo de buena calidad, y de esta manera de obrar, resultan naturalmente importantes economias que todo hilandero sabra apreciar.

En Francia los hilanderos han renunciado, por decirlo así, emplear los algodones de las Indias, tales que Surates, Bengale, etc., por que hallandose con muy ó menos de inmundicias, necesitan ser batidos mucho tiempo por los volantes de los trilladores, y de lesto resulta mucha perdida de algodon y mueho menoscabo.

El Epurador al contrario, trabaja y limpia perfectamente estos algodones, y separa bien las inmundicias del bueno algodon. Las trenzas que da esta preparacion pueden ser hiladas sin otra carda por los numeros gruesos.

Para la fabrica de los algodones en rama que sirven para entretelar, el epurador se ha hecho enteramente indispensable : el fabricante encuentra las operaciones del espulgo, de la carda y de poner en hojas ú en trenzas, que son reunidas en una sola máquina abastecendo de 100 á 120 kilogramos de algodon preparado por dia.

Los menoscabos ó caidas muy malas de algodon, se limpian muy bien allí y se transforman en un mantel continuo que se dobla como se quiere, hasta que se haya alcanzado el espesor que se quiere.

Las ventajas y economias notables de esta nueva manipulacion comparadas con la que se usa para preparar el algodón de entretelar, se encuentran guarantizadas y probadas por una experiencia de muchos años, por la creacion de nuevos establecimientos y por los encargos sucesivos de Epuradores.

# RAPPORT

# FAIT PAR M. HENRI ZIEGLER, INGÉNIEUR-MÉCANICIEN

AU NOM DU COMITÉ DE MÉCANIQUE

# SUR UNE MACHINE PRÉPARATOIRE POUR LES FILATEURS DE COTON

INVENTÉE ET PRÉSENTÉE A LA SOCIÉTÉ INDUSTRIELLE

# Par M. GEORGES-ALPHONSE RISLER, de Cernay

Lu à la séance du 26 mars 1851.

### MESSIEURS,

Dans votre séance de mai 1848. M. George-Alphonse Risler, de Cernay, vous a adressé une lettre par laquelle il vous annouça avoir inventé une machine pour la préparation du coton, qu'il nomme « Épurateur » et par laquelle il parvenait à remplacer une partie des opérations qui se font par les passages successifs des batteurs, et en même temps tout le travail opéré par les cardes en gros ; de manière à livrer une nappe de coton parfaitement ouverte et épurée, apte à passer directement aux étirages pour les filés en gros numéros, ou bien à être livrée aux cardes en fin quand il s'agit de produire des qualités supérieures.

A l'appui de sa communication. M. George-Alphonse Risler vous présenta une série de nappes en coton parfaitement ouvert et propre sortant d'une machine construite d'après son système par MM. André Kœchlin et Ce, et fonctionnant dans l'établissement de MM. Mathieu Risler fils, à Cernay. Vous avez renvoyé cette communication à votre comité de mécanique, qui, après avoir examiné les résultats indiqués et fournis par l'inventeur et avoir étudié les principes dont il était parti, apprécia de prime abord la haute portée qu'elle pouvait avoir. Toutefois, les membres de votre com té ont été d'avis que, dans une question de cette importance, il était convenable de surseoir au jugement à porter, et de ne vous en présenter le rapport qu'au moment où, par un travail plus prolongé et en se répandant dans différents établissements, cette invention pût fournir des résultats obtenus et garantis par une pratique suivie et reconnue comme positive.

Depuis lors, M. Risler, par diverses communications qu'il vous a adressées, vous a tenu au courant des progrès et des résultats de son invention, et quand, par sa lettre du 30 octobre dernier, il vous a annoncé qu'une de ces machines, établie et perfectionnée d'après les indications fournies par une expérience de près de trois années, fonctionnait depuis quelque temps dans l'établissement de Cernay, une commission, composée des divers membres de votre comité de mécanique, s'y est rendue pour voir fonctionner cette intéressante machine, l'examiner en détail, et peur se rendre un compte exact des résultats qu'elle fournit, et ce que l'on est en droit d'en espérer.

C'est à la suite de cet examen que j'ai été chargé par votre comité de vous adresser le présent rapport que j'ai l'avantage de vous soumettre.

Il est généralement reconnu qu'en passant successivement sur le batteur éplucheur et étaleur, les filaments de coton sont toujours plus ou moins fatigués et brisés et qu'avec les boutons et les ordures proprement dites il passe encore une quantité notable de bon coton entre les grilles ; ce fait est tellement avéré, que, pour les cotons longue soie, le passage par le batteur ne peut avoir lieu sans qu'il en résulte une détérioration telle, qu'il faut avoir recours au battage et à l'épluchage à la main. Sur les cardes en gros il en arrive de même, car les débourreurs de chapeaux, celles du grand tambour et le duvet que l'on retire se composent non-seulement des impuretés proprement dites, mais en moyenne partie des filaments de coton qui auraient parfaitement bien pu servir.

Tel que M. Risler vous l'a annoncé, sa machine a pour but de réunir en une seule opération le travail opéré par

le hatteur éplucheur et le cardage en gros; elle emprunte à chacune de ces machines une partie de leurs éléments constitutifs et fournit en résultat un produit qui conserve aux filaments de coton plus de nerf et de force en réduisant d'une manière très-notable le déchet produit par les batteurs et les cardes en gros en usage jusqu'à ce jour, tout en supprimant le débourrage à la main, opération pernicieuse à la santé de l'ouvrier et onéreuse au fabricant.

Pour remplir ces conditions, M. Risler emploie un tambour de 1<sup>m</sup> 20 de diamètre, faisant 250 à 270 tours par minute, et recouvert de garnitures de cardes, dont les dents sont d'une forme particulière et d'un numéro de fil de fer très-gros. Dans les intervalles réservés entre les plaques de cette garniture sont placées des brosses métalliques, flexibles et élastiques: leur extrémité dépasse légèrement la circonférence des garnitures de plaques. En arrière et autour de ce tambour, sont disposées 4 ou 5 paires de cylindres cannelés, chacune avec son rouleau fournisseur, pour recevoir un rouleau à nappe provenant d'un simple passage du batteur étaleur.

Au-dessous de chaque paire de cylindres cannelés est adapté un grillage de batteur composé de deux ou trois règles triangulaires. En avant du grand tambour sont disposés trois tambours déchargeurs qui enlèvent le coton dont s'est chargé le grand tambour. Des mouvements de peignes détachent de ces trois tambours les nappes qui se réunissent de nouveau en un rouleau sur une machine à bascule.

De cette explication sommaire il découle que le principe de nettoyage est le même que celui des batteurs qui sépare et éloigne les boutons et les impuretés que renferme le coton, au moyen de l'action de la force centrifuge qui projette les corps les plus lourds à travers la grille placée sous les cylindres alimentaires; mais au lieu d'operer par des lames en métal, M. Risler emploie des brosses élastiques qui quoique étant très-souples acquièrent suffisamment d'énergie par l'effet de la force centrifuge pour opérer le nettoyage d'une manière convenable tout en ménageant le coton.

Pour ouvrir les flocons et séparer d'entre eux les divers filaments, les rendre parallèles et aptes à être laminés, il conserve le principe de la carde qui consiste à ne détacher que peu à peu et pour ainsi dire par filaments isolés, sans les briser, la nappe qui est délivrée au fur et à mesure par les cylindres alimentaires, et de transporter ces filaments sur des tambours peigneurs où ils sont déchargés et disposés en sens parallèle sous la forme de nappe.

Outre l'application heureuse des brosses métalliques, l'Épurateur se distingue encore par deux innovations très-importantes et qui ont d'autant plus de mérite, qu'elles n'existent à aucune autre machine préparatoire pour coton

Ce sont en premier lieu les alimentations multipliées. On conçoit que l'effet produit par le grand tambour doit être le même en chaque point de sa circonférence, et que le résultat obtenu à la fois avec quatre ou cinq alimentations ne doit pas différer beaucoup de celui obtenu sur une seule nappe : on peut donc dire que le produit de cette machine est proportionnel au nombre des alimentations qui pourraient être portées au delà de cinq, si on adoptait un tambour de plus grand diamètre.

La troisième innovation faite par M. Risler consiste dans l'application de trois tambours déchargeurs. Par ce moyen, il arrive à mieux dégager le grand tambour; il obtient un peignage plus parfait et une nappe plus régulière. Chaque tambour produit une nappe de qualité différente.

Les résultats obtenus par ces diverses combinaisons ont pleinement justifié les prévisions de l'inventeur, et votre commission a pu se convaincre, par l'inspection de la machine qu'elle a vu fonctionner à Cernay, que les faits annoncés par M. Risler sont bien exacts et confirmés par l'expérience pratique.

Tel qu'il a été dit ci-dessus, le coton est fourni à cette machine en nappes sur rouleaux obtenus par le passage d'un seul volant de batteur étaleur, afin de pouvoir opérer la pesée; il y a donc l'économie des divers autres passages des batteurs éplucheurs et étaleurs.

Le produit d'une de ces machines exécutée d'après les dimensions du modèle exposé, est en moyenne, en coton très-ordinaire d'Amérique, de k° 10 par heure de travail, soit en 12 heures k° 110 à 120 de coton parfaitement ouvert et épuré, équivalant en qualité à un bon cardage en gros, pour laquelle qualité et quantité l'on compte généralement cinq cardes en gros doubles de 0<sup>m</sup> 90 de largeur.

En disant que la qualité équivaut à un bon cardage en gros, nous restons plutôt au dessous de la réalité, car voire commission a été à même de se convaincre que les nappes fournies par les Épurateurs aux cardes en fin, donnent lieu à un cardage en fin supérieur à celui qui s'obtient par une alimentation des cardes en gros ordinaires, cette préparation étant mieux épurée et mieux dégagée des feuilles et des corps étrangers.

Nous avons pu voir que c'est une filature de Sanebruïk, MM. Em. Bouchotte fils et Cie, qui a été la première dans le cas de faire établir au commencement de l'année dernière trois de ces machines, et qu'ayant augmenté le nombre de ses broches, cette maison en a encore démandé une quatrième.

Par la correspondance et les certificats délivrés par ces Messieurs, nous avons acquis la conviction que les résultats obtenus chez eux corroborent ceux que nous avons trouvés à Cernay. Il en est de même pour diverses autres de ces mêmes machines qui fonctionnent au dehors, tant à l'étranger que dans les filatures de l'intérieur: partout l'on trouve à peu près des résultats identiques par rapport à la quantité de produit et de l'économie notable en fait de déchet.

Comme le déchet résultant des divers passages sur les batteurs et les cardes en gros est loin d'être constant d'une filature à l'autre, mais qu'il est relatif d'abord à la qualité du coton employé et ensuite à l'état et à la manière de régler et de faire fonctionner les diverses machines, nous ne pouvons guère indiquer d'une manière générale l'économie qui résulte à cet égard par l'emploi des épurateurs de M. Risler; toutefois, nous avons pu constater qu'en moyenne il y aura de 5 à 5 1/2 p. 0/0 en nature. En ajoutant à cette économie en déchet celle de frais généraux, qui se compose de l'intérêt d'un capital moindre en fait de machines, moins d'entretien et de force motrice, et enfin l'économie de la main-d'œuvre, nous trouvons que sur le prix de revient d'un kilogramme de filé n° 30 à 40, il y aura, par l'emploi de ces machines, une économie de 7 à 8 centimes.

Dès le commencement de la mise en train de ces nouvelles machines, M. Risler a eu l'idée d'en faire une heureuse application pour la fabrication des ouates et pour laquelle spécialité cette machine semble être créée tout exprès.

Jusqu'à présent ces ouates sont préparées par des cardes ordinaires portant sur le devant un grand tambour sur lequel la nappe s'enroule au fur et à mesure qu'elle est détachée par le peigne. L'épaisseur de coton enroulé sur le tambour étant devenue suffisante, on l'enlève de dessus la circonférence du tambour, et il en résulte une nappe dont la longueur est déterminée et limitée par le développement de cette circonférence. Avec l'Épurateur par contre l'on parvient à fabriquer des pièces de ouate d'une longueur quelconque, car la nappe en sortant ayant déjà une épaisseur et une consistance telle qu'elle peut s'enrouler et se dérouler isolément, l'on forme sur le devant de la machine des rouleaux qui sont plus tard triplés et quadruplés pour arriver à l'épaisseur totale de la ouate. Par là, on a le grand avantage de prendre pour les deux côtés extérieurs de la ouate du coton d'une qualité supérieure, tandis que l'intérieur est formé par une qualité plus ordinaire. Nous avons acquis la certitude que cette fabrication traitée de cette manière donne de forts beaux résultats, et une maison de cette ville qui avait passé, à partir du mois de novembre 1848, un marché avec M. Mathieu Risler fils, pour la fourniture régulière de k° 100 de ouate par jour, monte en ce moment un établissement ad hoc où seront placées plusieurs de ces machines.

Par l'emploi de ces Épurateurs la fabrication d'ouates a donc fait un progrès notable, tellement différente de l'ancienne que c'est pour ainsi dire une nouvelle industrie acquise à notre rayon industriel.

En résumé, votre comité de mécanique trouve que l'invention de M. Georges Risler mérite sous tous les rapports l'intérêt de la Société industrielle, tant pour les résultats qu'elle fournit dès aujourd'hui, que pour l'avenir qui lui est réservé pour l'ouverture et l'épuration des diverses matières auxquelles le principe de cette machine pourra encore être appliqué.

Elle a été jugée de la même manière par la commission nommée pour l'admission des produits à l'Exposition universelle de Londres, qui a déclaré que cette machine méritait d'être admise en première ligne.

En conséquence, votre comité vous propose de faire insérer dans une de vos prochaines publications le présent rapport accompagné du plan et de la description que nous vous présentons.

En même temps le comité vous propose de renvoyer à votre commission des médailles la question de savoir si, d'après les conditions de votre programme des divers prix proposés pour les arts mécaniques, l'invention de M. Risler ne rentre pas dans l'une ou dans l'autre de ces catégories, ou si elle ne mériterait pas une distinction spéciale.

Pour copie conforme:

Le Secrétaire de la Société industrielle.

DANIEL DOLPHUS fils.

Nous faisons suivre le rapport précédent des attestations favorables d'une partie des manufacturi ers les plus honorables qui ont appliqué cette épuration dans leurs établissements.

# Copies des Lettres des principaux Manufacturiers qui emploient l'Épurateur.

Mulhouse, le 31 mai 1848.

Nous vous faisons, Messieurs, avec d'autant plus d'empressement, la déclaration qui va suivre, qu'elle est en tout conforme à la vérité.

Nous certifions donc que nous avons traité avec votre maison pour l'exploitation en commun de tous les brevets qui ont été pris sur le continent pour la machine dite Épurateur, dont plusieurs exemplaires ont été construits dans nos ateliers. Les expériences qui ont été faites jusqu'ici sur ces machines ont démontré d'une manière positive que l'économie obtenue relativement à l'ancien mode de nettoyage et de préparer le coton d'Amérique ne doit pas être appréciée à moins de 4 1/4 0/0.

Enfin, nous ajoutons que tous les filateurs qui ont vu fonctionner l'Épurateur se sont prononcés en sa faveur.

Signé: ANDRÉ KOECHLIN ET Cie.

Saarbruck, le 21 mai 1849.

Je soussigné directeur de filature de M. Bouchotte fils et Cie à Saarbruck (Prusse Rhénane), ayant été spécialement chargé par ces Messsieurs de me rendre à Cernay pour étudier le mérite de la nouvelle machine appelée Épurateur, fonctionnant dans la filature de MM. Risler fils, affirme que la nappe de coton de l'Épurateur est bien nettoyée, et que la matière est bien cardée pour une production de 9 à 10 kilog, par heure de travail.

J'ai vu préparer du coton du même mélange, passé dans un assortiment ordinaire, 4 volants de batteur et 2 cardages, 4 filets 30/40, ensuite dans un autre assortiment, un batteur étaleur, 2 volants épurateurs et 1 cardage, pour même no. Il est incontestable que cette dernière préparation est supérieure, et l'Épurateur est tellement débarrassé des feuilles (poivre) qu'on ne croirait pas au même coton si l'on n'avait pas suivi le travail.

Signé: GÉRARD.

Approuvé par Bouchotte fils et Cle et légalisé par le bourgmestre,

L. WAGNER.

Saarbruck, le 22 février 1850.

M. G. A. Risler à Cernay.

Vos trois Épurateurs marchent depuis quelques semaines, et voici les résultats qui se présentent.

La production moyennne, en treize heures de travail, est de 124 kilog. en nappes enroulées, remplaçant parfaitement le cardage en gros.

La moyenne du déchet est de 3 0/0, savoir :

1 1/4 0/0 ordures, boutons, feuilles, d'aucune valeur.

1/2 débourrure de tambour.

1 1/4 duvet gras, balayure et évaporation.

Le débourrage des tambours se fait deux fois par jour, avant la sortie des ouvriers.

Par l'emploi des Épurateurs, nous employons des cotons en laine de qualités inférieures à ceux employés auparavant, et notre fil est encore plus propre, car il est incontestable que ces machines débarrassent parfaitement les impuretés du coton. Nous pensons obtenir par ce travail une augmentation de production d'éfilés sur les métiers, d'après ce que nous voyons déjà.

En employant des nappes d'Épurateur sur cardes, les tambours et duvets sont plus propres, il se fait moins de chapeaux et renfermant peu de boutons. Les garnitures de ces cardes doivent nécessairement se conserver dans un meilleur état d'entretien et durer davantage.

La force motrice qu'absorbe l'Épurateur est entre 1/4 ou 1/3 de cheval.

Tels sont les faits que nous avons observés jusque aujourd'hui; esperons que par la suite ils seront confirmés.

Signé: E. BOUCHOTTE FILS ET Cie.

Fribourg, le 4 août 1850.

M. G. Risler.

Je profite du retour du monteur de M. A. K. et Cie, pour vous dire que votre Épurateur marche depuis une quinzaine de jours et que je suis tout à fait satisfait de son travail. L'ouvrier, quoique encore novice, pourrait très-bien encore soigner une deuxième machine.

Jusqu'à présent je n'y ai travaillé que des déchets, et malgré cela je ne fais débourrer que deux fois par jour, un peu avant midi et le soir. Le déchet est de 1/2 0/0 en débourrant, et le restant dessous la machine d'augets n'est autre chose que bou-lons, feuilles, sans le moindre coton. Les nappes, avec ce coton-déchet, sont propres, et j'espère dans peu de temps pouvoir commander une deuxième machine.

CARL FERNBACH.

M. G. Risler.

Innsbruck, le 13 août 1850.

Depuis quelques mois, l'Épurateur de M. A. K. et Cio, de votre invention, est en activité, et il nous fait plaisir de pouvoir vous dire qu'il fonctionne sans interruption, d'une manière régulière, et que nous sommes très-satisfaits de la qualité des produits ainsi que de la production de la machine, qui est de 200 anglades par jour de treize heures de travail.

Par procuration, K. Kach Privilez-Machi, Band et Spinnfabrik, N. GANALH.

s'Cette filature, qui a également ateliers de construction, nous a acheté en octobre 1850, le privilége de construction des Épurateurs, en ont construit depuis et marchent à toute satisfaction, suivant les lettres du 12 février 1851.)

M. G. Risler.

Cernay, le 10 août 1850.

J'ai fait mettre aux cardes enfin le coton Louisien, très-ordinaire, que vous avez fait passer à votre nouvelle machine dite Épurateur, et que vous m'avez renvoyé en nappes enroulées sur ensouples ; j'ai trouvé qu'en sortant des cardes le coton ainsi passé était plus propre, mieux débarrassé des feuilles et boutons que le même coton passé à deux batteurs et deux cardages, Je ne puis que vous en exprimer ma satisfaction, ainsi que sur la marche et le produit de votre machine, et je désire que bientôt la circonstance me permette de vous demander de ces machines.

Signé: H. WITZ, Filateur. Légalisé par le Maire. GRAFF.

Saarbruck, le 17 septembre 1850.

M. G. Risler.

Sur la marche des Épurateurs, nous ne pouvons que vous confirmer les résultats précédents, et ils nous ont amenés à employer pour nos filés des cotons 1/2 Sarats 1/2 Amérique bas; le déchet moyen en est à l'Épurateur 5 3/4 0/0, et la production moyenne est de 8 kilog. 75 par heure et par machine (temps mort compris pour nettoyage, débourrage et aiguinage).

L'expérience nous a prouvé qu'il y a lieu de modérer la production des machines lorsqu'on leur donne des cotons aussi bas et ainsi chargés d'impuretés. Par coatre, en travaillant du coton d'A mérique très-ordinaire, la production de 10 kilog. à l'heure est facile à atteindre, et le déchet n'est que de 3 0/0.

Par l'aide des Épurateurs nous sommes arrivés à produire davantage sur cardes en fin, au point que nous venons de commander à M. Kæchlin un quatrième Épurateur, pour fournir aux card es et fileuses.

L'extrême importance, au point de vue du rendement de ces cardes, c'est qu'elles sont alimentées par des nappes d'Épurateur d'une égalité parfaite, et les feuilles ou nappes superposées les unes sur les autres, ce qui est un véritable avantage auguel nous ne nous attendions pas.

Signé: E. BOUCHOTTE FILS ET Cie.

Saarbruck, le 5 mars 1851.

M. G. Risler.

En réponse à votre amicale du 25 passé, nous vous dirons que notre quatrième Épurateur fonctionne bien, et que nous sommes contents sous tous les rapports. E. BOUCHOTTE FILS ET Cio.

Mulhouse, le 6 mars 1851.

Nous soussignés Ehrsam père et fils, négociants à Mulhouse, certifions avoir fait le 28 novembre 1848 un marché avec M. Risler fils, filateur à Cernay, pour qu'il ait à nous destiner, pendant les deux années 1849 et 1850, la production d'une de leurs nouvelles machines dite Épurateur, à raison de 100 kilog. par jour en rouleaux, nappes continues, en coton déchet et coton neuf à volonté.

Nous affirmons que nous sommes très-satisfaits de ces nappes et qu'elle s sont de beaucoup supérieures, tant en qualité qu'en propreté, à tout ce qui a été produit au moyen des cardes ord inaires, tout en donnant une grande économie de déchet.

De plus, nous affirmons avoir créé par les avantages de ces machines un e nouvelle transaction commerciale et venons pour cela de monter un établissement où fonctionnent plusieurs Épurateurs, pour fournir aux demandes de la consommation.

EHRSAM PERE ET FILS.

Légalisé par le Maire,

Le 1er Adjoint, FOR. KOECHLIN SCHLUMBERGER.

Mulhouse, le 21 mars 1851.

M. G. Risler, à Cernay.

J'ai la satisfaction de vous annoncer que l'Épurateur que vous m'avez fourni, construction A. Keechlin et Cie, marche, et je suis satisfait de son rendement; il fournit une belle nappe de coton bien nettoyée et plus propre que d'un premier cardage; ensin le résultat est tel que vous me l'avez annoncé, je me sais un plaisir de vous le témoigner.

Agréez, etc.

Signé: J. ANTHONI, Filateur.

The frame exhibited by Mr. G. Risler contains the produce of échantillons envoyés par M. G. the machine.

- A. Cotton-wadding, of American cotton (very middling), coming from the Epurateur or Cleaner and changed into wadding before coming to the carding.
- A'. Warp 30/32 and woof 42/44, carded only once after the cleaning by the Epurateur.
- A". Stuff spun with threads A'.
- B. The same cotton A coming from the Epurateur or Cleaner and wadded to be transferred immediately on the drawing frame.
- B'. Warp 15/16 and woof 20/22, without other carding than the Epurateur or Cleaner.
- B''. Stuff woven with threads B'.
- C. Surate cotton wadding coming from the Epurateur.
- D. The same with Egyptian cotton.
- E. The same with Georgian cotton.

All these patterns are worked without beating machine. -They have passed through the Spreading-Cleaner or "Épurateur étaleur" before they are transported to the Epurateur or Cleaner.

Voici la nomenclature des Risler à l'Exposition universelle.

- A. Nappe de coton d'Amérique (très-ordinaire) provenant de l'Épurateur et nappé pour aller sur cardes en fin.
- A'. Filés Chaîne 39/32 et Trame 42/44, un seul cardage après Épurateur.
- A". Tissus faits avec filés A'.
- B. Même coton que A, provenant de l'Épurateur et nappé pour aller directement aux Étisages.
- B'. Filés Chaîne 15/16 et Trame 20/22, sans autre cardage que l'Épurateur.
- B". Tissus faits avec filés B'.
- C'. Nappe de coton Surate, provenant de l'Épurateur.
- D. Jumel.
- E. Georgie longue soie.

Nota. Ces cotons n'ont point vu de Batteurs, ils ont été passés à l'Épurateur étaleur, avant d'aller à l'Épurateur proprement dit.

Der Rahmen von Berren G. Ris= Ier ausgestellt enthält bie Brobutte ber Maidine.

A Baumwollenwatte von amerifanifder Baumwolle (fehr ordinar), aus bem Épurateur fommend und in Watte verwandelt, um auf Feinfragen zu geben.

A' Rettengarn 30732 und Gin= fcufgarn 42/44, nur einmal nach bem Épurateur gefrant.

A" Stoff mit ben Barnen A' ge= mebt.

B Diefelbe Baumwolle wie A que bem Épurateur fommend und gewat= tet um bireft in bie Stredmaschine gebracht zu werden.

B' Rettengarn 15/16 und Ein= schufgarn 20722, ohne weiteres Kragen als des Épurateur's.

B" Stoff mit ben Garnen B' ge= mebt.

C Watte von Surate=Baumwolle, aus bem Épurateur fommend.

D Watte von Jumel-Baumwolle, dito:

E Watte von Georgischer dito. dito.

Alle diese Proben sind ohne Schlagmaschine verarbeitet; fie find burch ben Épurateur étaleur gegan= gen , ehe sie auf ben Épurateur gebracht worden find.

I t Ju. 16 d h 8 on m es we th e st ın ti g. eq is Bri ar be ha d. wo inc ılt it b€ acl Jul ode of & an nu nuc irn ry AL. n v

### DESCRIPTION OF ARTICLES

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### IMPROVED SCREW-CUTTING LATHE

SECTION 6.

This Lathe is so simplified in construction, as to work with greatprecision, and to be subject to the control of a mere boy.

The improvements consist in working the Saddle, and throwing we the back gear of the fast headstock.

The Saddle is worked thus. The nut is solid, with a spur wheel converged it, working with another spur wheel on a back shaft, on what there is a bevelled pinion working with a bevelled wheel, keyed on upright shaft working through the Saddle. There is another bevelowed wheel keyed on the top of that shaft, working with a bevelled piniupon the handle shaft, which moves the Saddle backward and forweat pleasure; in addition, there is an index disc upon the handle shaft which divides the screws into as many threads as are required, with interfering with the change wheels. The bevelled wheels on the Saddle communicate motion to the screw in the Saddle, which is self-actions as the saddle communicate motion to the screw in the Saddle, which is self-actions.

The improvement in the fast Headstock consists in a worm and worm wheel, for throwing out the back gear.

This Lathe is cheaper in construction than the ordinary Lathes for this purpose; and great economy of labour will be effected in cutting screws, as it admits of being worked by a wholly unskilled hand, whereas the ordinary Screw-cutting Lathe requires to be worked by man of some ability; it is also applicable as a Planing Machine, and as an ordinary Turning Lather.

### SOLID WROUGHT-IRON RAILWAY WHEELS.

IN SECTION 5.

Four specimens of wrought iron wheels, adapted for locomotor engines, carriages, waggons, &c.

Three of these specimens are entire pieces of wrought iron, sounds welded together; their distinguishing qualities are, perfect security fraccident, arising from the fact of there being no separate tires bolted as in ordinary wheels; being in one entire piece, no amount of shake or friction can possibly cause the tire to come off or break, as frequently does across the bolt-holes, and as a necessary consequent these wheels are more durable. Another special and important advantages their lightness, there being a saving of about 1½ cwt. in each wages wheel, or 6 cwt. in a set of four. By reason of the substitution to

stextent of machinery for manual labour in the process of manuals, coupled with a considerable saving of material, these improved els, with all their superiority in point of lightness, durability, and on, can be produced nearly as cheap as the ordinary compound his of cast and wrought iron. One of these wheels (with six oval car) is manufactured upon a system as to admit of extremely rapid cition; this was patented two years ago. A set of driving wheels his principle have been in use more than half a year, besides twenty of waggon wheels on different railways in various parts of the stry.

the fourth wheel is all of wrought iron, but with the tire separate

The PATENT SOLID SIX-OVAL-SPOKED WHEELS are particularly mmended, as also the PATENT MANUFACTURED AXLE, made from lest Yorkshire Scrap Iron that can be had; the bars forming the offer which, are of a crescent shape, and which in process of manure so place the fibre of the iron, that it is in that position to give the greatest possible resistance to those tests which axles in use on haps are subject to. In addition to which, each bar occupying the to be being of the crescent form, gives to it the greatest possible resistance to everything that has a tendency to produce fracture.

S. O. & W. would particularly recommend their Best Schaf Iron a faced with very hard Foreign Charcoal Iron, as combining in a Type tegrat degree toughness and hardness, so essential in the qualities Railway Tire. The sample shown took fifteen blows from a six-ton mer, falling two feet, to break it.

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### FIGURES AND DESCRIPTIONS

### TEELED MILLS AND MACHINES

USED BY \*

GROCERS, OILMEN,

COFFEE ROASTERS, CORN CHANDLERS, BREWERS,

DRUGGISTS, EMIGRANTS, FARMERS,

HORSE KEEPERS, CONFECTIONERS, AND OTHERS,

MANUFACTURED AT

### 3 2 7 2 3 3

### 13, EASTCHEAP, LONDON.

ESTABLISHED UPWARDS OF THIRTY YEARS.



### CONTENTS,

Steeled Mills, ornamented and plain, for Coffee, Cocoa, Spices, Drugs, and all kinds of fine powders, pp. 1, 2, 3, 4, 5, 6, 7, and 8.

Machinery used in the Cocoa and Chicory Trades, p. 8. Malt Mills, Corn Mills, Bean Mills, Corn Crushers, and other Machinery

used for Corn, p. 8.

Coffee Roasters, pp. 9 and 10, and back

Sugar Mills, pp. 11 and 12.

Machines for Chopping Loaf Sugar, p. 12.

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Machines for Sifting and Regulating

the size of Tea, p. 13.

Patent Suspension Machines, for weighing with accuracy and dispatch, p. 14.

For information relating to re-cutting and repairing Mills, see back of

For information on the advantages of Roasting Coffee, see back of cover.

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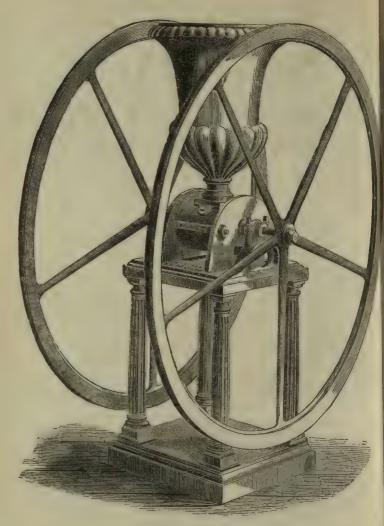


Fig. 15.

### SAVAGE'S

NEW ORNAMENTAL MILLS WITH BRIGHT HOPPEI'S

FOR EXHIBITION IN RETAIL ESTABLISHMENTS.



THE attention of TEA AND COFFEE DEALERS is respectfully requested to SAVAGE'S DANAMENTAL MILLS, figs. 6, 15, and 18, the prices of which, in consequence of the employment IMPROVED MACHINERY AND Tools, combined with the DIVISION OF LABOUR in their manufeture, are the lowest for which Ornamental Mills of FIRST-RATE QUALITY can be afforded.

It is generally known that a very great increase in the retail trade in Coffee is obtained by the shibition of Ornamental Mills in a conspicuous situation, especially when the Coffee is also Roasted the Premises, and probably a much greater number of Grocers would have availed themselves this advantage had they not been prevented by the great cost of Ornamental Mills. It will be precived that some of the above Mills are so moderate in price as to place them within the reach persons engaged in business to a moderate extent.

The Mills represented by fig. 6 and fig. 15, have the latest improvement, i.e. the external m-metal bearings, which prevent them from being unequally worn, and greatly increases their arability. The economy and other advantages of this improvement have been fully proved by wards of eight years' experience; they also do not become clogged or waste coffee at the spout.

### PRICES OF ORNAMENTAL MILLS.

### Fig. 18.

h BRONKE, with Bronzed Hoppers, to be fixed on counters.

1st siz	æ.						. s	£2	10	0	
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Ord ,	, ,		 	 	۵	0 1		4	0	0	
4th ,	, .		 	 		•	٠	5	0	0	

Fig. 18.

GOLD BRONZE, with BRIGHT Hammer wrought, BRASS Hoppers, to be fixed on Counters.

3rd	Bize		 ٠	٠	٠				£5	0	0
(th	99	۰		0	•	٠	a	D	6	0	0

### Fig. 6.

In GOLD BRONZE, with BRIGHT Hammer wrought, Brass Hoppers, to be fixed on Counters.

4th											
6th	-11			۰		0.0	,		10	0	0

### Pig. 15.

In BRONZE, with BRONZED Hoppers, having only one Fly-wheel; to stand on a Floor.

6th	size						b		£9	0	0
7th	22					۰	٥	۰	12	0	0

### Fig. 15.

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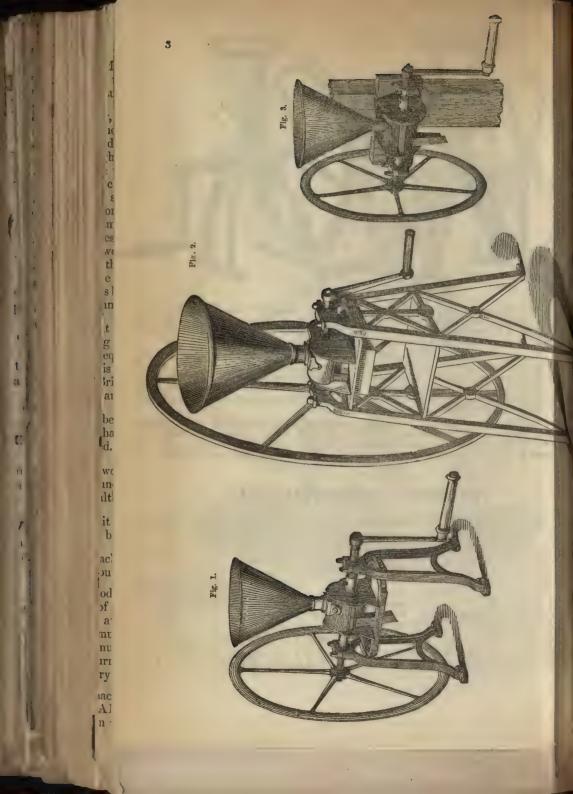
In GOLD BRONZE, with BRIGHT Hammer wrought, BRISS Hoppers; to stand on a Floor. 6th size ..... £12 0 0 7th ,, 8th ,5

### Fig. 6.

FINISHED BRIGHT, with two bright Fly-wheels, BRIGHT Stands, very elegant double fluted BRIGHT Hoppers ; to be fixed on Counters.

	size							۰	•	£14	0	0	
ith	23	٠	٠	٠	٠	۰	۰	۰	٠	16	0	0	

Ditto,	F	loor	of	a 8	Shop.	. 012	-
6th 8th	size					0	



MALT. PEAS. BEANS, OATS, INDIAN CORN, LOAF SUCAR, SHELLAC, and all substances capable of being ground in Steeled Mills. CHICKRY, COCOA,

### THE FIGURES. OF DESCRIPTION

Fig. 1 represents a Mill to be fixed on a counter, on an improved iron stand with gun metal bearings, which receive the spindle of the Mill it supports.

Fig. 2 is an improved iron long stand, to be fixed on the floor of a slow, bearings to receive the Mill supported by it.

Fig. 3 is a carriege, to be fixed to a post, having also gun-metal bearings to receive the spindle of the Mill supported by it.

The forms represented by May a post, having also gun-metal bearings to receive the spindle of the Mill supported by its connected by Mill 2, are most used by Greens, Othman, Duggiese, &c., and are generally preferable, as they can be fixed to the floor or counter by the screws, and do

not require a post to be erected to receive them.

3 is used when it is more convenient to attach the Will to a post, or when it is required to grind into a sack or other very large receiver, as is usual in grinding Malt and other Com. Is is also a convenient mode of suplying the principle of the Improved Stands to Mills which have not been outshally designed for it; as any Mill which has been fixed to a post in the ordinary way, can be alread at a small expense to be used in a carninge, it; 3. It is also an economical way of applying the principle to Mills driven by Steam or Horse Power. THE PROULIAR ADVANTAGES OF THIS CONSTRUCTION, - the utility and economy of which has been proved by upwards of ten years' experience, any that

ns no contribe force can be communicated to their grinding surfaces. Mills surported in this manner are prevented from being surporting their durability greatly increased.

These advantages are obtained by the interposition of the grownest bearings (which receive and support the spindles of the Mills) between the Mills and their fly-wheels and handles. The co-cities force to which a find-null is usually sufficiented is the weight of the fix-wheel. This tends to wear out the teeth on the interior surface of the lower part of the outer cone

or case before these on the upper part; it has also the further disadvantage of causing the Will to grind finer at the lower than the upper part.

In Mills driven by Straw or Honer power, with a Rigger and Dand, the tension of the Band Cobing agreeter country force than the weights of the fly wheels usually put to Handmilt) causes than to be parterly worn in much less time, and the evils of grinding to mequal fineness, and rapid destruction are greatly increased. The principle of the mode of support represented alove, is therefore even more receind for Mils advan by mechanical power than for Handanille, atthough it is by far the best and most economical mode of supporting the latter. The applicability of converting constructed Convent Mills chimitan to those used for Colice, Coom, Spices, &c. 1 to grinding such substances as Chicago, Drugs, and some of the cereal

grains, pariousaly live and Maiz, is generally known; but the great expanse arising from wear, caused principally by the eccentric forces to which they have been generally subjected by the mode, in which power has been communicated to them, has prevented their gournal adoption for similar purposes, although the saving of power, which frequently amounts to more than one-half, and the small space they occup, render them very desirable; and when the wear is reduced by the above mode of support, very economical also.

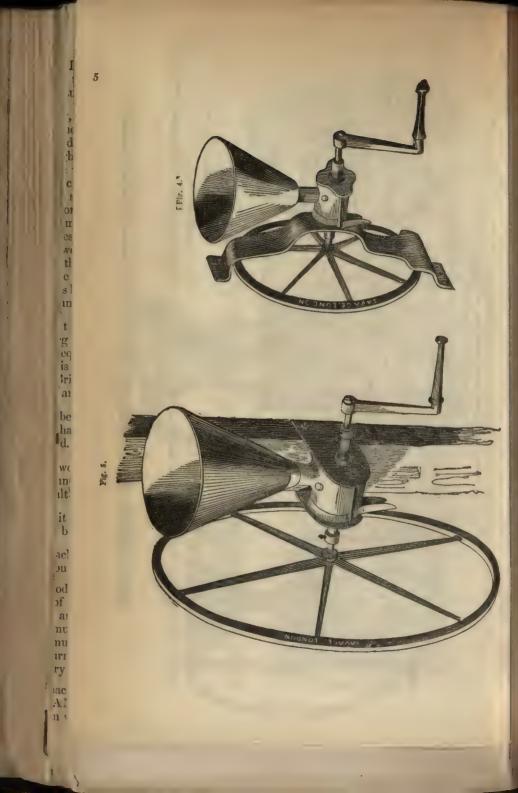
### PRICES OF MILLS ON IRON STANDS.

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Fig. 3.	ED		m-m	nnn	TITLE	W. O			
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	SAVAGE'S IMPROVED BIRACKET CARRIAGES,   4th Size	-	rnal	A+ 46	-	polic			O have a second only in the second of the se
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Mills on SAVAGE'S Original Iron Stands, to be fixed on Counters, fig. 18 (see page 2) with plain Iron Hoppers, as represented in ngs. 1 and 2, £2 28., £2 13s., £3 6s., and £4.

## MILLS RE-CUT, REPAIRED, AND FINISHED EQUAL TO NEW MILLS.

id pro



TO BE FIXED TO POSTS, FIG. 5.

With Gun-metal Bushes, made of extra strong iron; for grinding

STATERE
ALMONDS LOAF SUGAR COCHINEAL INDIGO PRUSSIAN BLUE CUDBEAR ALUM CREAM OF TARTAR
WHEAT INDIAN CORN RYE BARLEY PEAS BEANS OATS INSEED
GINGER CAPSICUM CORIANDER CINNAMON PEARL BARLEY GROATS CANTHARIDES
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PEPPE

COCOA ROAST SPICE RICE SAGO

NIMAL CHARCOAL

AC DYE HELLAC

RINTING INK THARGE

ALAP, and most drugs,

HUBARB OBACCO

### OF FINE POWDERS. KINDS AND ALL

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Ally of the above Mills made with teathed wheels and pinions, from 17s. to 50s. extra.

for steam, water, wind, or horse power, fitted up on Cast-iron Tables, or otherwise, with riggers or pullies complete. Mills for all purposes, made of extra strong iron,

### WHEELS, SAVAGE'S FLANCH MILLS WITH FLY

Fig. 4,

Are the same prices per size as mills to be fixed to posts, fig. 5. These mills are particularly convenient for use on board ships, for which they were specially designed. They are also desirable for hotels and coffee houses, for domestic use, for wholesale coffee dealers to grind their samples, and for smaller renail shops, or any situation where saving room is important, as they can be fixed against a partition or bulk-head, or any flat surface, unithout a post; the fly-wheel being close to the surface to which the mill is fixed, occupies but very little room, and is out of the way.

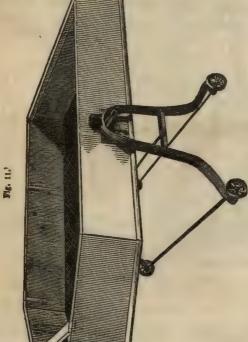
MILLS for DOMESTIC USE or GRINDING SAMPLES, fig. 4, £1 48., £1 14s., £2 5s., and upwards.

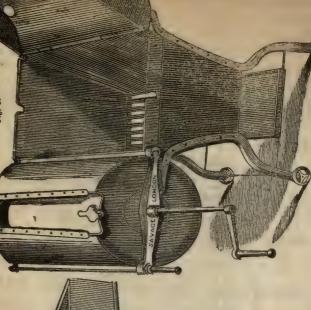
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SAVAGE'S PORTABLE LEVER COFFEE ROASTER.

areal over reasons the cape in secular this can never over without and in the fig. 11, by one person without assistance, who is thereby enabled. The Cylinder may be easily lifted of the fire, and 11s contents discharged into the cooler, fig. 11, by one person without assistance, who is thereby enabled to finish the process of roasing off the fire, with the Cylinder in the position represented in the figure, by which means the shade of colour may be regulated.

The Furnace is fined with Five Bricks, by which the loss of heat by radiation is much diminished, and the durability of the machine very greatly increased. The fire is easily regulated, and the direction of the draught of air being vertical, it is not liable to burn more rapidly at one end than the other.

The interior of the Cylinder is provided with an apparatus which causes so rapid a movement of the Coffee from one end of the Cylinder to the other and back again, that rowsting unequally—or what is termed a "speckled roast," is rendered impossible. It is very conveniently portable, being provided with wheels to facilitate its removal. The prices are as under :--

.. £7 0 .. 9 0 12 12 21 0 221bs. with Counterbalance Weight Portable Lever Roaster to Roast 28lbs. 112lbs.

# SAVAGE'S PORTABLE VIBRATING WOVEN WIRE-BOTTOMED COFFEE COOLER, Fig. 11.

These Coolers are particularly convenient for use, being proveded with wheels, so that they may be rolled up to the Roaster when required, and the contents of the Cylinder discharged into the Cooler at once; they cool the Coffee much more rapidly than a wooden Cooler, and prevent it from becoming black by lying in a heap. When not in use the Cooler may be lifted out of the iron stand, and hung against a wall or otherwise disposed of to save room,

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	Sooler and Stand	**	33	33
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## SAVAGE'S IMPROVED COFFEE ROASTER.

WITH RACE, FOR SAMPLES OR DOMESTIC USE.

WHICH CAN BE USED ON ANY ORDINARY FIRE, FROM SIX SHILLINGS TO TWENTY SHILLINGS EACH. SAMPLE COFFEE ROASTERS TO BE HEATED BY GAS.

A. Savags manufactures Roasters to draw out in Portable Iron Frames, fig. 10; also Portable Lift-off Roasters. The price of each as under :--PORTABLE LIFT-OFF ROASTERS PORTABLE ROASTERS TO DRAW OUT.

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ower, either on the lever principle or in sliding frames, or to slide on their own shafts, with furnace-doors, bars, and other iron work complete, made to CYLINDERS TO BE USED IN BRICK FURNACES for Rossling Copper, Chicory, Malt, &c., made of eatra strong from, fitted up for Steam of Hand

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### SAVAGE'S

### IMPROVED NEW TABLE SUGAR MILL.

The Frame is entirely of iron, and has that part which supports the gun-metal plummer blocks or bearings (in which the spindles revolve) in the form of a strong table (similar to that of a table steam-engine); this prevents the plummer blocks becoming displaced or out of truth with each other; consequently the Mill works more uniformly, requiring less power, and has its durability increased.

The rollers are turned in the lathe, whereby they are enabled to crush all the small lumps of Mauritus Sugar, which greatly improves the colour—this also admits the rollers to work closer to the scrapers, and thereby causes his sugar to adhere to them.

The rollers are made to revolve at very unequal velocities, which subjects the Sugar to a drawing action—i-stead of merely crushing—causing it to be delivered in a free state, not distinguishable from Sugar which has been sitted, as the crystals are not broken.

The Hopper is of wrought iron, which is much more durable than wood, and the Sugar adheres to it less.

The Mill is fitted up with two sets of toothed wheels, by which the rollers are prevented from becoming closer at one end than the other,—this has also the further advantage of more steady and equable action and has liability to fracture.

By an improvement in the handles the danger of its falling over, when lifted too high, is prevented.

### THE PRICES OF SUGAR MILLS ARE AS UNDER:-

0 3611 - 1 1 0 1 0 8		8.	
Sugar Mills to be used on Casks, fig. 7	4	10	0
Ditto, with iron bearings on portable iron frames, with wheels handles, and drawers	5	10	0
Ditto, with the rollers turned in the lathe and iron hopper	6	10	0
Superior ditto	8	0	0
Improved New Table Sugar Mill, with gun-metal bearings, fig. 8	10	0	0

### Sugar Mills repaired in a superior manner.

NEW IMPROVED PATENT MACHINE

FOR

### CHOPPING LOAF SUGAR.

The Improved Patent Machine for Chopping Loaf Sugar possesses the following advantages:—

The largest machine is capable of cutting the loaf without the necessity of using a batchet, and will chop Sugar into pieces more square in form, more uniform in size, and consequently having a better appearance than can be effected by the ordinary chopper. It also has the advantages of chopp ng double the quantity in the same time, and making much less dust—the little dust formed being free from chips of wood.

The price of the Machine which is most preferable for general use is £2 10s., this is capable of chopping a titler without using the hatchet. The smaller size £1 16.

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### SAVAGE'S

### MACHINES FOR REGULATING THE SIZE OF TE

Fig. 12.

Prices of the Machines, when designed to be used on a Canister,

These Machines have been found, by the experience of upwards of two thousand firms during the last fifteen years, to possess the following advantages:—

Tea may be regulated to any required size, at the rate of a chest in four minutes, by one of the largest Machines, and at a proportionate rate by one of those of smaller size.

The loss of weight, amounting to upwards of 1 per cent., and the unwholesome inconvenience resulting from the escape of tea-dust is prevented.

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Prices if fixed on a pel-Chest with enclosed Drass represented.

For the use of per in the Wholesale or la Retail Trades, figure (which represents Machine mounted or painted wooden with enclosed drawer prevent the escaper of tea-dust,) is the generally convenient rangement; but when quantity of Tea requi to be prepared is not v great, and the saving room is important. form represented in fig 12 may be most adv tageous, as it may be veniently used on an o nary canister.

### HEBERT'S PATENT CELLULAR TEA SEPARATORS.

THESE MACHINES ARE PREFERRED BY SOME TEA DEALERS.

THE PRICES ARE AS UNDER:-

Largest size £5 0 0 | Medium size £3 10 0 | Smallest size £2 7 6

### MACHINES FOR MIXING TEA.

Mills for Making Tea-Dust.

### SAVACE'S NOISELESS MACHINE FOR SIFTING TEA.

This is by far the most perfect Machine for preparing Tea for sale, as it CANNOT INJURE THE FACE OF GREEN OR BLACK TEAS; it makes no dust, and prevents the escape of any dust previously existing in the tea; it also has the advantages of working without noise, of not being liable to get out of order, and sifting with great rapidity, a large Machine being capable of Sitting Chest of Congou in Four Minutes, and Cutting all the Large Leaves to the size of "Middle Leaf" at the same time.

Machines, may have them applied to the Noiseless Sifting Machines, thereby saving a consider ble portion of their cost.



24



### PATENT SUSPENSION MACHINE,

FOR VEIGHING WITH ACCURACY.

Which is less expensive than the ordinary Scales and Weights, and occupies no useful room.

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WHERE IT IS SOLD.

(Extracted from the "London Commercial Record" of June 5th, 1846.)

11

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"The practice of Roasting Coffee being generally adopted by grocers, particularly those not residing in London (although many dealers in the Metropolis do reast the own), it is presumed the undermentioned statement of the economy and other advantages which are found to result in doing so, will be acceptable to the trade.

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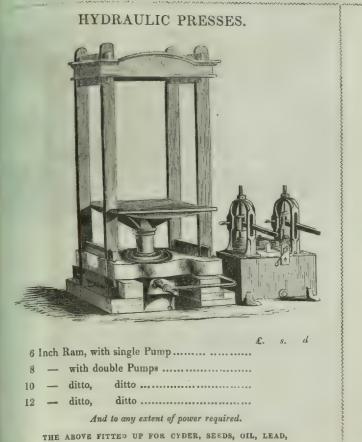
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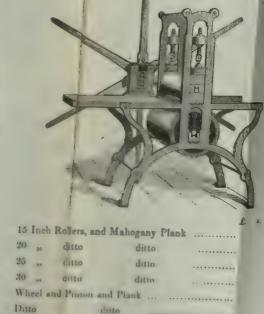
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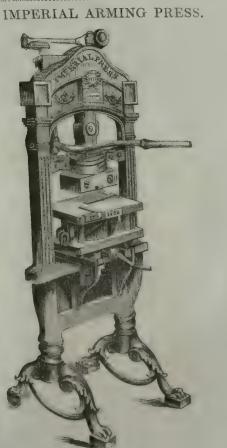
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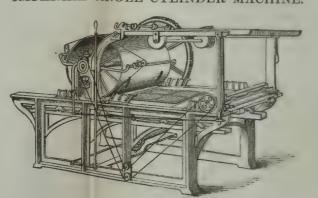
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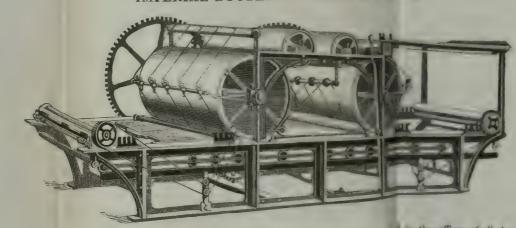


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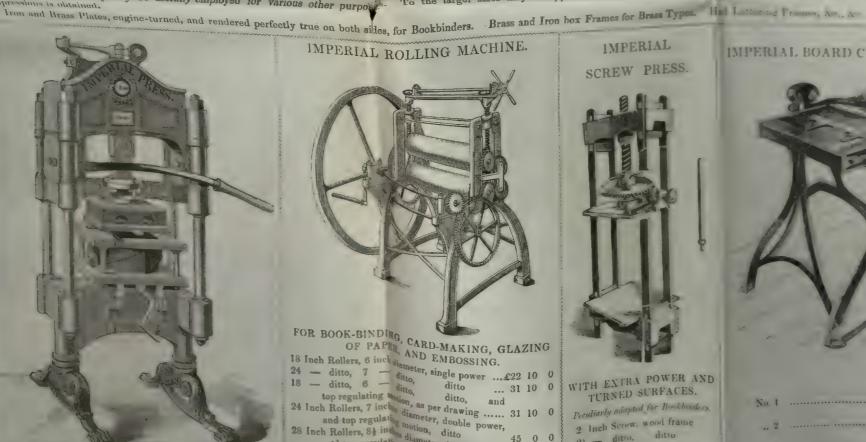
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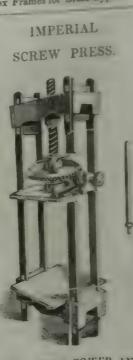
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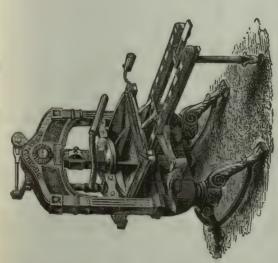


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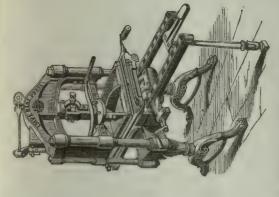
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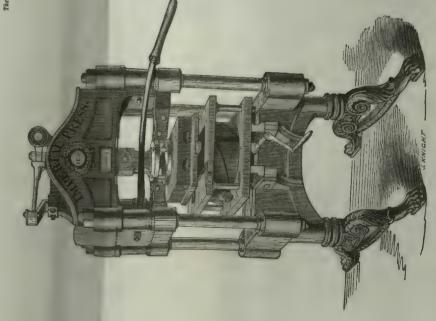
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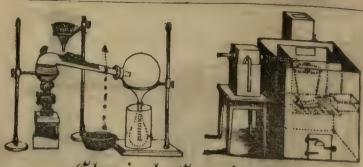
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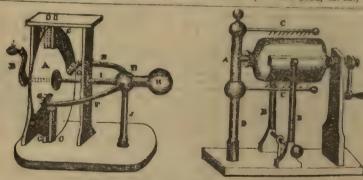
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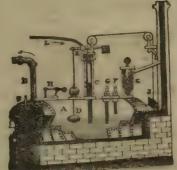
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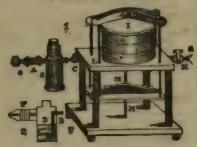
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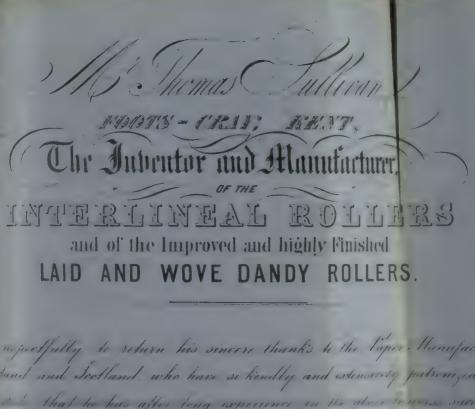
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### A MACHINE FOR FORMING THE SHADES IS NOW AT WORK IN



its use, and the protection it affords to the sight, combine to make it worthy of universal patronage This Article has met with high commendation wherever it has been used; its utility,

show the relative sizes of the different kinds, with their titles. "Cambridge" (the smallest) more especial use of Mercantile, Banking and Public Offices. Funnels, to the tops of which (by a simple adjunct furnished with the Shades) it is readily susp (the largest) 15 inches; in each of the six sizes are produced a great variety of Ornamental Des For the Desk, the Study or the Work Table it is alike fitted, as for every description of fi



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DESCRIPTION OF THE PRINCIPAL PARTS.

- 1. Acid bottle.
- 2. Lead generator.
- 3. Wooden gasometer. 4. Bent supply pipe for gas.
- 5. Straight draw-off pipe for gas.
- 6. Blow-off cock at top of rising bell.
- 7. Wooden stands for fixing generator, gasometer
- and solution pan, to a proper level.
- 8. Draw-off pipe for gas, from lead generator.
- 9. Cock to supply solution pan from cistern. 10. Wooden cistern to hold solution.
- B Foot of machine.
- C Pump of ditto.
- D Condenser
- E Spur wheel.
- F Safety valve weight.
- G Draw-off pipe from gasometer.
- H Pipe from water cock to solution pan.
- J Wood handle.
- K Fly wheel.
- L Gas cock.
- M Water cock.
- N Bottling hose. O Solution pan.
- P Filling cap for lead generator.
- R Discharge cap for cleaning out ditto.
- W Water lines on the generator, gasometer, and solution pan, showing the height to which those vessels ought to be filled.
- N Nose for bottling from by hand; it is fixed into the condenser, and when a bottling machine is used. the nose N is to be unscrewed, and one end of the pipe which connects the bottling machine is screwed on in its place.

J. TYLOR & SON are able to furnish such directions as will enable any person to go into the manufacture of soda water, with the certainty of making a good article, although they may be without the assistance of a person accustomed to the manufacture.

The BOTTLING MACHINE engraved below supplies the place of an experienced bottler.

Put a piece of wire or string round the necks of the bottles.

held up by the three spikes which are at the top.

stens it. The cross tie can be put on afterwards by a lad.

Frice, complete, with wooden stand, and pipe, to connect to any size Soda

ditto tinned

bottle firmly in its place.

Water Machine

Ditto

Copper wire

Ditto, mounted on deal table, with treadle

Iron bottling wire, in 13 inch lengths . . .

BOTTLING MACHINE.

DESCRIPTION OF PATENT BOTTLING MACHINE, FOR SUPPLYING THE

PLACE OF AN EXPERIENCED BOTTLER.

Chonen good corks, and put them to soak in water, and then with a cork squeezer fit them.

A number of bottles being prepared in this manner, the bottler takes one up, and extracts

the cork, which he puts up the interior of the cylindrical fitting A; there it will stick, being

He then places the bottle in the cup B, and his foot on the left treadle, thus holding the

The lever handle C is then turned to admit a supply of Soda Water into the bottle. The

eft foot must be eased a little, in order to let some of the gas in the bottle escape; and

ustantly pressed down again, when the lover C may be again turned, which will cause the

The lever C being then shut, with the right hand the Bottler takes hold of the long pro-

ecting lever, and presses it down until he sees the cork is sufficiently in the bottle; then

rith the assistance of the right foot on the right treadle, he lowers the bottle B as far as D,

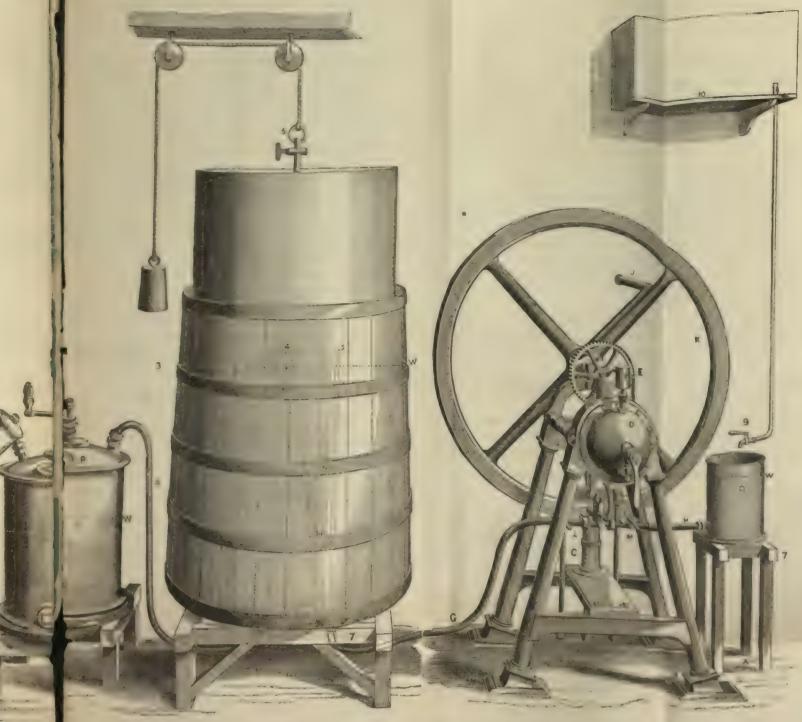
at the same time easing his left foot. This gives him an opportunity of passing the wire, or

string, through the notch in the brass plunge, which presess upon the top of the cork, and

An active person will learn to bottle the best quality Soda Water in a few hours. About

en dozen per hour is a fair rate, although we have seen twice that quantity done in an hour.

Lemonade is bottled in the same manner, syrup being measured into the bottle first.



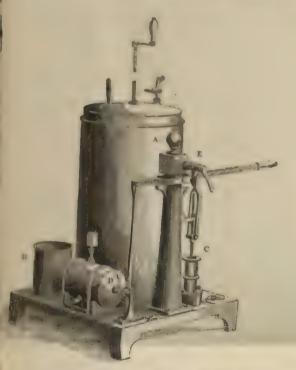
NO. 1. SODA WATER MACHINE; AS FIXED READY FOR USE.

		0	off	160 dos	. per day,	when at work occupies	a space of 1	0 ft.	long,	4 ft.	wide, a	nd 8	ft. high;	when packed for al	hipping, takes	about 65 cu	ibse ft. L	
No. 1.	Soda Water Machine for bot				29	Ditto	1	2	79	5	22	9	99	Ditto	ditto	110	9.9	
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No. 2.	Soda Water Machine for bot	2155	off	50	0.0	Ditto		6	11	3	11	7	11	Ditto	ditto	42	9.9	
No. 4.	Soda Water Machine for bott	E1 SE	of	94	11	Ditto		4		3	• • • • • • • • • • • • • • • • • • • •	6	**	Ditto	ditto	30	9.9	
No. 5.	Soda Water Machine for bott	nn	ed l	Iron Wis	re out in 1	3 inch lengths	per lb.		,,		Cop	per V	ire cut i	n 13 inch lengths	per II	b.		
						The value of the packages is about						per	cent.					

Pipe, 9, and the three Wood Stages each marked 7, are not included in the price above given, and will not be forwarded unless specially ordered. Every thing else is included. The Wood Cistern, 1

# TYLOR & SON, HYDRAULIC ENGINEERS, WARWICK LANE, NEWGATE STREET, LONDON;

Manufacturers of Soda Water Machines, Small Steam Engines and Boilers for working them, Hydraulic Presses, Steam Evaporating Pans in Copper, &c. &c.



NO 5. SODA WATER MACHINE. REGISTERED BY J. TYLOR & SON,

fina machine consists of a copper gas generator, A; solution pan, B; np, C; condenser, D, with safety valve; bottling cock, E; and a arate attachment from the condenser to supply a fountain on the ter, if required. It is complete without a lead generator, but if that chirred, it can be added with its gasometer in the place of the copper generator. One man working at this apparatus can, without assista manufacture and bottle twenty-four dozen of soda water or lemonade be day.

The whole machine (gas work included) is compressed into a square of that six inches, and every thing is fixed firmly upon the iron frame ich forms the foundation

emonades and Gingerades are made by putting the respective syrups the glasses, and then adding Soda Water to them; so that only one nder of Soda Water is required to supply a fountain.



COUNTER FOUNTAIN.

THE above Counter Fountain is supplied from a copper cylinder, as in the engraving, which cylinder is carried to a Soda Water Machine daily, or as often as required to be charged with Soda Water.

It is found profitable to sell Soda Water from the fountain, as there are no drawbacks as in the bottled Soda Water trade through breakage of bottles; and besides, the cost of bottling is entirely saved. Where a large business can be done, it is found convenient to employ the No. 5 Machine to make the Soda Water in. The Counter Fountain is then attached direct to the machine, and no copper cylinder underneath the counter will be required. As the No. 5 Machine only occupies a space of 2 feet 6 inches square, it can be put in a cupboard, or cellar, and by working it one or two hours a day, the fountain can be supplied with the freshest and best Soda Water, and other effervescent beverages, of a strength greater than it would be safe to put into glass bottles, and at a cost of 6d. or 1s. per diem

DIRECTIONS FOR WORKING NO. 5 MACHINE.

The above machine is worked on the following plan, and makes 24 dozen per diem :-

Lift off the copper rising bell, and put in 14ths. of powdered chalk or whitening, mixed with as much water as will fill the inner case of the copper the top, by which means it will fall into the position represented in the exercises of the top. Replace the copper bell and agitator, opening the cock the top, by which means it will fall into the position represented in the engraving. Shut the cock, and insert a lead funnel into the adjoining copper and pour down cold dilute sulphuric acid, invariably at the same time turning. , and pour down cold dilute sulphuric acid, invariably at the same time turning the winch handle, to stir up the whiting and water, which must be noved when exhausted at the end of the day, or other period, by means of the cure and the cur oved when exhausted at the end of the day, or other period, by means of the cup and screw provided near the bottom. The copper bell will be elevated the gas generated within it, but so that gas will be mixed with the company of the provided near the bottom. the gas generated within it, but so that gas will be mixed with the common air formerly in the bell, it must be tested by opening the gas-cock, and ling it escape, until the pangent smell indicates its purity. ng it escape, until the pangent smell indicates its parity.

he solution pan B contains a charge of water corresponding with one charge of gas in the generator. The cylinder D holds 2 dozen bottles, but not more a from 6 to 12 bottles should be drawn without working the long lever. From 1. s should be ready mixed to fill up the solution pan when empty. Work the long lever. From 1 to 2 oz. of carbonate of soda are sufficient for 4 gallons of water, and s should be ready mixed to all up the solution pan when empty. Work the long lever for 15 minutes, letting it strike home both up and down particularly the care that the right hand or gas cock is full open, and the left hand or water cold. the care that the right hand or gas cock is full open, and the left hand or water cock only partly open, and regulated so that the solution par may be care in proportion to the gas generator. Draw off say 6 bottles either from the battle open, and regulated so that the solution par may be compared. Add sulphuric acid: all as teed in proportion to the gas generator. Draw off say 6 bottles either from the bottling partly open, and regulated so that the solution and supplied and supplie the regulations of the water-cock, and the taste will determine if the proportions of the water-cock, and the taste will determine if the proportions of the water-cock, and the taste will determine if the proportions of to, to elevate the copper out again, the taste will determine if the proportions of the water cock, and the taste will determine if the proportions of the another 6 bottom in the regulations of the water are correct.

For Lemonade no soda must be put into the water, but a little syrup either into the bottle or glass previously to drawing.

# [ Prom the PHARMACEUTICAL JOURNAL, for FEB. 1845, Vol. V. No. VIII.

Is compliance with the request of several correspondents, we give a description of a Soda Water Machine, which is adapted for the preparation of scrated waters on a small scale, or for a more extensive manufacture, according to the size and completeness of the

Fig. 2 is a leaden generator, which is two-thirds filled with whiting and water; whiting being the cheapest form of carbonate of lime.

Fig. 1 is the sulphuric acid bottle, which being inverted, discharges its contents into the generator, and the carbonic acid passes into the bottom of the gasometer tub, which contains 100 gallons of water. The gas, cooled and purified by passing through the water, accumulates in the copper rising ball, which it elevates by its pressure.

The solution pan O is kept full by a supply pipe from a larger cistern, which contains pure water mixed with a proper quantity of soda.

C, The condensing pump, is worked from a crankshaft above it, turned with a winch-handle by one man, a fly-wheel equalizing the motion. A valve-box is placed above the pump-barrel, communicating both with the solution pan O, and the gasometer 4.

The piston, during its downward stroke, draws both liquid and gas through the valve-box into the barrel of the pump, the proportionate quantity of each being regulated by index-cocks, according to the taste of the manufacturer. In the up-stroke, the piston discharges the whole contents of the barrel inio the condensing

An agitator within the condensing chamber, moved by the spur-wheel E, rapidly revolving, mixes the compressed gas and water together.

A safety-valve, situated above the condensing chamber D, indicates when the pressure is equal to twenty atmospheres, and then the soda water may be bottled off through the cock in the front of the condensing chamber.

It has been an object in the construction of the machine to save labour, and as much as possible to prevent the contamination of the water by metallic particles removed by friction. To ensure absolute purity. he interior of the machine may be coated with sil-

We think this apparatus likely to be useful to those who prepare soda water in the country for retail consumption, and it is equally applicable to other kinds of

DOUBLE NO. 1. SODA WATER MACHINE, FOR 800 DOZEN PER DIEM.

THE generator and gasometer are similar to those shown below, attached to the No. 1 single machine.

The machine, on being unacked, must be put together in the same manner as the No. 1 machine, except in the following particulars. The bolt Z has been loosened, in order to allow the bottling cock N to turn up. Turn the

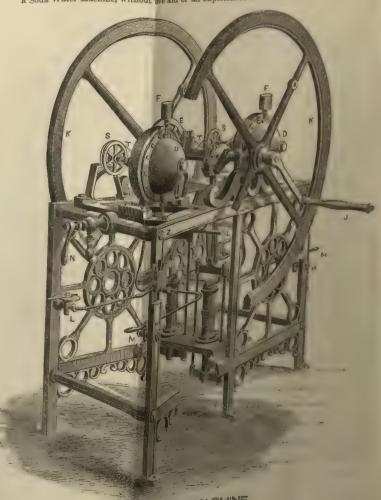
bottling cock into the position represented in the drawing, and tighten the bolt Z. There are two solution pans, with pipes attached to one of them. Attach the end of the pipe to the screw in front of the cock M which is on the right of the machine, and the pipe attached to the remaining solution pan to the screw in front of the cock M, which is on the left hand of the machine. The two solution pans must rest on two stands, about lead generator and wooden gasemeter are sent of the same construction as that represented on the top of this sheet, attached to the single No. 1 Machine, with the exception that there are are two pipes, instead of the single pipe marked 5. There are also 8 screws at the bottom of the tub; to one of these the lead pipe leading to the lead generator is attached; to another, the tin pipe leading to the screw at the back of the cock I, which is at the right hand side of the back of the machine, and the other tin pipe leads from the remaining screw on the bottom of the gasometer tub to the back screw of the cock L, which is on the lefthand side of the back of the Soda Water Machine. Screw these unions up tight, seeing that there are collars of leather on the unions.

Observe that the gut bands T and T work smoothly and tightly over the large wheel or pulley E, on to the two little pelleys, S and S.

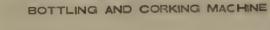
If you wish only to work the machine as a single machine, by unscrewing the two bolts which are in the coupling brast just below V, you will throw the pump out of work, and you can also unhook the gut band, which comes over the left hand pulley S. It requires great care to disconnect these parts, you will do an injury to the machine.

It is so arranged, that the bottlers sit on the right and left of the machine, and have the index cocks very handily at their right and left hands, and the bottling cocks in front of them. The bottling nose N uncrews, in order to receive the pipe from the bottling machine. There are 4 bearings in the crank which require oiling daily, or oftener, through 4 oil-cup holes, also the two guide rods between the two slings, and the two pins on which the slings vibrate.

For further particulars see J. Inler & Son's printed description of the method of working a Soda Water Machine, without as aid of an experienced bottler.



DOUBLE NO. I. MACHINE.







# PATENT AUTOGRAPHIC PRESS,

OR PORTABLE

## PRINTING MACHINE.

FOR THE COUNTING-HOUSE, OFFICE, OR LIBRARY,

EVERY PERSON MAY BECOME HIS OWN PRINTER.

The Process is extremely simple, and thousands of copies may be produced from any writing, drawing, piece of music, or design (previously made on paper), and the requisite number of copies being finished, the subject may be effaced and another substituted.

This invention will be found of great utility to Railway Companies, in corresponding with their Stations; to Joint Stock Banks, for producing copies of Letters to Branches; to Merchants, for Price Currents and Statements; to all persons engaged in Business, for printing their own Circulars, Invoices, Statements, &c.; to Teachers, for multiplying copies of lessons; and to Private Individuals it will be found useful and amusing, in privately producing copies of their own composition in poetry, prose music or drawing.

The attention of the Exporter and Emigrant is particularly called to the importance of this invention, for the Colonies and Foreign Countries: and when it is considered that in many places no printer is to be found, and that in some countries, especially in the East, the complication of the numerous Oriental characters renders it necessary for all documents to be multiplied by the tedious process of transcribing, the peculiar

advantages of the Autographic Press become manifest.

The Press is manufactured in three sizes, and the whole apparatus is contained in neat boxes, French-polished. It is now in use in some of the first establishments in this country and abroad, and may be seen at work at the Patentees' or Agent's, as below. feeling convinced of the great utility of this invention, and anticipating a large sale, he Patentees have determined upon offering them at the following low prices, which acclude everything pertaining to the Press, and full instructions for using it:—

PRICES. Improved, on Mahogany Stand of Print a Subject 14 × 9 - £4 4 0 - £7 7 0 - £9 9 0

Ditto 16 × 10 - 5 5 0 - 8 8 0 - 10 10 to 18 × 13 - 6 6 0 - 9 9 0 - 12 12 0

WATERLOW AND SONS, 65 TO 68, LONDON WALL, LONDON.

## OPINIONS OF THE PRESS.

From the City Article of "The TIMES," Sept. 6, 1850.

A very useful invention has been patented by Messrs. WATERLOW & Sons, which will be productive of great convenience Banking Establishments and other concerns requiring to send ont circulars with despatch. It is called the Autographic res, and a letter written on prepared paper with which it is furnished, can be transferred by a short process to a metallic ste, from which any number of copies may afterwards be taken on common paper and by ordinary pressure. In the lonies and other places where facilities for such operations are now scarce, and in all cases where the documents to be pied are of a confidential nature, it is likely to prove particularly valuable.

# WATERLOW & SONS' PATENT AUTOGRAPHIC PRESS.

#### OPINIONS OF THE PRESS.—(Continued.)

#### From the "MORNING CHRONICLE," Aug. 31, 1850.

Autographic Press.—An invention has been patented which is likely to prove of great utility to public companie and men of business generally. It consists of a press and materials, by means of which any person may, from a document previously written on paper, reproduce any required number of copies. Circulars, letters, prospectuses, &c., can be produced by this invention with the greatest facility; and any number of designs, music, plans, &c., may be expeditionally printed in the same manner. The apparatus is extremely simple, and is all contained in a box of small size, perfect portable. It will become a great desideratum to merchants in the colonies, and will be found very useful at the chieffices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send to the Branches from time to time. We understand it has received the patronage of His Royal Highness Prince Albert, and it is the invention of Messers. Waterlow and Sons, London Wall, by whom it has been patented.

## From the "WESTMINSTER REVIEW," Oct. 1, 1850.

The Autographic Press, or Portable Printing Machine.—Under this name the Messrs. Waterlow, of London Wall have patented a very simple but effect we apparatus, the merits of which cannot fail to be duly appreciated as soon as the are known. The subject to be printed is transferred from paper to the surface of a highly-polished metallic plate, and bein charged with ink in the usual manner, the paper on which it is to be printed is placed upon it, and the tympan being laidown, a wooden scraper with a sharp edge is passed over it by the hand, when a perfect impression is at once obtained. Althis may be done even upon the drawing-room table; and the whole of the apparatus, when not in use, is enclosed in a nea French-polished box, which may be carried beneath the arm. The utility of such a simple application of the lithographi principle must be obvious to mercantile men and others, who require a number of copies of their correspondence.

The name of "Autographic Press" may perhaps induce the idea that this is some cumbrous machine, similar to that use in lithographic printing. Such, however, is not the case, for no press, in the ordinary acceptation of the term, is used at all the impression, as we have before mentioned, being produced by hand. The requisite number of copies having been obtained the design is effected from the plate, which is then ready to receive another.

#### From the "ATLAS," Aug 31, 1851.

Bankers' and Merchants' Chroulars.—An invention has been submitted to us, which is likely to prove of great utilit to public companies and men of business generally. It consists of a press and materials, by means of which any person may, from a document previously written on paper, produce any required number of copies. Circulars, letters, prospectuses &c., can be produced by this invention with the greatest facility; and any number of designs, music, plans, &c., may be expeditiously printed in the same manner. The apparatus is extremely simple, and is all contained in a box of small size perfectly portable. It will become a great desideratum to merchants in the colonies, and will be found very useful at the hief offices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send the Branches from time to time. We understand it has received the patronage of H.R.H. Prince Albert, and it is the syvention of Messrs. Waterlow and Sons, London Wall, by whom it has been patented.

# From the "ILLUSTRATED LONDON NEWS," March 22, 1851.

Waterlows' Authorized Priss.—Amongst the most practically useful inventions which have recently come unde our notice, whether we regard it in reference to the commercial world, or as an instrument in the hands of a private gentleman. The Autographic Press," patented by Waterlow and Sons, is entitled to foremost mention. By this apparatus, any person may with facility print any number of letters, circulars, pen and ink sketches, musical notations, or other matters in while implicate copies are wanted; the whole machinery being compassed in a neat box not larger than a lady's writing-case. The mode in which the transfer is effected may be briefly described. For instance: a letter is written on prepared paper and then transferred to a polished metallic plate by means of hand-power, assisted by a "scraper," The paper is the rashed off the plate with water, when the writing remains on the plate, and is charged with ink from a roller somewhat finilar to the ordinary printing roller. Paper is now laid on the plate, and upon the application of pressure, in the mannel sefore described, the impression is derived, and the process may be repeated sixty or seventy times in the hour, the plate is defined and the process may be repeated sixty or seventy times in the hour, the plate is defined and have seen are equal to lithography.

#### From the "BANKERS' MAGAZINE," Aug. 1, 1850.

AUTOGRAPHIC PRESS.—An invention of great utility. Bankers' Circulars may be printed from it with the greate callity. It will become very useful at the chief offices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send to the branches from time to time. It has received the patronage of H.R.H. Prince Albert, to whom it has been submitted by the Patentees, Messrs. Waterlow and Sons, London Wall.

## From "SAUNDERS'S DUBLIN NEWS LETTER."

During the course of the week we have had exhibited to us a novel but have useful machine, called the "Autograph ress," invented and patented by Waterlow and Sons, of London. The object of the inventors is to enable merchant ankers, clerks, &c., to take an ad infinitum number of copies of their circulars, letters, documents, &c. It entire appersedes the old mode of copying by the ordinary press, and far outstrips the "manifold" system. In fact, it is a comple lithographic press, put up in a neat portable box, and can be purchased at a moderate price. To the commercial communish must prove a great desideratum.

#### From the "BOMBAY GAZETTE," Oct. 14, 1850.

We see that a very useful invention has been patented by Messrs. WATERLOW and Sons, of London, which will be productive of great convenience to banking establishments, and other concerns requiring to send out circulars with despate it is called the "Autographic Press," and a letter written on prepared paper, with which it is furnished, can be transferre by a short process, to a metallic plate, from which any number of copies may afterwards be taken on common paper, and ordinary pressure. In the Celonies, and other places where facilities for such operations are now scarce, and in all cas where the documents to be copied are of a confidential nature, this invention is represented as being likely to proparticularly valuable.

From the "RAILWAY RECORD," Sept. 11, 1850.

General Orders to Station Clerks.—Messrs Waterlow and Sons, London Wall, have recently patented eat box, in such a way that any person may, with the greatest facility, reproduce from MS, any number of copies that box in such a way that any person may, with the greatest facility, reproduce from MS, any number of copies that be required. It is called the "Autographic Press"—is very neat, and perfectly portable. Railway Comparould find it exceedingly convenient in issuing orders to their Stations; and it would in point of expense very spay its moderate cost.

